The OIL WEEKLY

FOR THE DRILLING, PRODUCING, PIPE LINE INDUSTRY

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LOOKING AHEAD
. . . with the Editor

A DIRECT outgrowth of wartime developments is the use of multiple engine combinations being applied successfully to oil field drilling operations. The engine combinations were first used for power in landing craft, and many of the requirements that prompted such use are also found in oil field drilling operations.

One similarity is a maximum of power with a minimum of weight in a minimum of space. Another is the need for flexibility of power. Both needs are met by compounding maximum horsepower of all the engines of a multiple unit, or by operating any number of engines, even one singly if desired.

This latter feature also offers possibilities for fuel consumption economy as well as freedom from shutdowns, should some of the engines fail. Also by using multiple identical engines geared to a single shaft, the problem of availability of parts and expert service help is greatly simplified, in case repairs are necessary.

A rig powered with eight Diesel engines developing their output through only two drive-shafts was used by Loffland Brothers Drilling Company in drilling the lower portion of Cities Service Oil Company's Lawson 1, in McClain County, Oklahoma. This well discovered the deepest production in the Mid-Continent area when it flowed 1292 barrels of oil and 3,750,000 cubic feet of gas at 10,942-90 feet.

A complete description of the engine combination used will be described by Harry A. Hess, staff writer, in a forthcoming issue.

The OIL WEEKLY

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The Changing Panorama

Rail Group Alert To Peace Problem

THE Texas Railroad Commission is to be commended for postponing its regular monthly production hearing until August 30. This action shows commission members are alert to the importance of keeping production in line with current demand, and that they recognize the end of the war means sharp fluctuations in the use of petroleum products.

By postponing the hearing from August 17, the commission made it possible to delay establishment of Texas producing rates for September until the last possible moment. This gives the commission, PAW and operators an opportunity to watch developments for nearly two addiitonal weeks. Since these two weeks so closely follow cessation of fighting, a better idea of how much oil will be needed in September might be available.

By preventing excessive overproduction during the coming transient period, such action might be instrumental in keeping the position of the industry as stable as possible. This might encourage earlier return of oil controls to state agencies.

O'Mahoney Plan for Ending Regimentation

A PLAN to free business from all regimentation, one which covers taxation, employment, anti-trust laws and an appeal tribunal, has been offered by Senator Joseph C. O'Mahoney. The five-point program, its author claims, would "set business free from regimentation by either private or public authority" and would mean "economic freedom, which is the basis of political freedom. The program which "has been discussed many times" with President Truman, according to the Wyoming senator who heads the special Senate Oil Investigation Committee is as follows:

"1. Adopt a system of incentive taxation to stimulate investment of private capital in new, independent enterprise so that we may stimulate creation of jobs.

"2. Enact the full employment bill without delay so as to reestablish a peace market to take the place of the war market.

"3. Make it clear that there will continue to be full enforcement of anti-trust laws so that private business at home and abroad shall not be curtailed and regimented by private monopoly.

"4. Enact an administrative law to provide an impartial tribunal to which the citizen may appeal rules, regulations and decisions of Government bureaus and administrative agencies.

"5. Enact a national law providing a national charter for organizations engaged in interstate and foreign commerce so that the duties and responsibilities of all such organizations may be definitely understood."

Research—well, that means anybody working any place to do something different and or cheaper. Hence, a researcher may be anybody and a research laboratory can be a woodshed, basement, kitchen, park bench, jail, penitentiary, pig-pen, chicken coop, or a modern college or industrial laboratory.

—DR. HOWARD E. FRITZ, director of research, The B. F. Goodrich Company.

Secondary Recovery A Kind of Wildcatting

OF ALL the problems confronting the oil industry, that of getting more oil out of the reservoir once it is discovered, looms largest. In spite of all the research devoted to the subject, the actual percentage of oil we are able to recover is really low. When it is realized that from an oil content aggregating 250 million barrels, 25 to 40 million barrels only are recoverable by present methods, it does seem that there is yet room for much progress in recovery operations. These figures were quoted recently by Dr. R. V. Hughes, director of production research for the Pennsylvania Grade Crude Oil Association, of Bradford, Pennsylvania, in speaking of the Oil City Quadrangle. The oil content remaining in the ground is "enormous," according to his statement.

Price and research, he said, are the factors on which depend in large measure, recovery of vast reserves of crude oil underlying the Oil City area. The research project of the Pennsylvania Grade Crude Oil Association has two objectives: reducing the residual oil content and cutting producers' operating costs.

Recovery is not as low in all areas of the country, as Dr. Hughes believes it to be in the Oil City district. Much progress has been made in the newer fields. We do know, however, that as much if not more oil remains in the formations generally, as is possible to extract under present knowledge and methods.

Wildcatting might be thought of in new terms: more thorough and determined study to improve recovery. Pressure conservation and maintenance is undoubtedly the key to this problem in new fields; secondary recovery the key in older fields. They are fundamental to greater recovery and the best minds of the industry would do well to concentrate on removing the obstacles that limit their application and operation.

An electric tube so sensitive that it makes possible accurate measurement of the electricity in the light of a star more than five quintillion miles away has been developed by Westinghouse. Smaller than a 25-watt incandescent light bulb, this tube is simplifying the detection of impurities in high explosive compounds and is speeding electro-chemical analyses of steel.

Lifting of Controls To Bring Problems

QUICK revocation of a number of wartime petroleum controls indicates all such restrictions will be withdrawn as rapidly as possible, with PAW likely to be liquidated by the end of the year. This will leave the industry free to operate on a vigorous, competitive basis. This is the wish of the industry.

However, oil men must realize this will thrust upon them the full responsibility for ironing out the adjustment to peacetime operations. It must be realized that the problem of curtailing production to diminished consuming rates will be difficult. Each producer has a share in this responsibility, and should be alert to this fact.

Harry Wiess, president of Humble Oil & Refining Company, makes some pertinent comments on the production outlook and its problems in an article on page 30.

Cars are going into the scrap heap at the rate of about 4000 a day or 1½ million a year. Since Pearl Harbor approximately 5 million cars have "died," Office of Defense Transportation estimates.

Agency Is Needed To Succeed PIWC

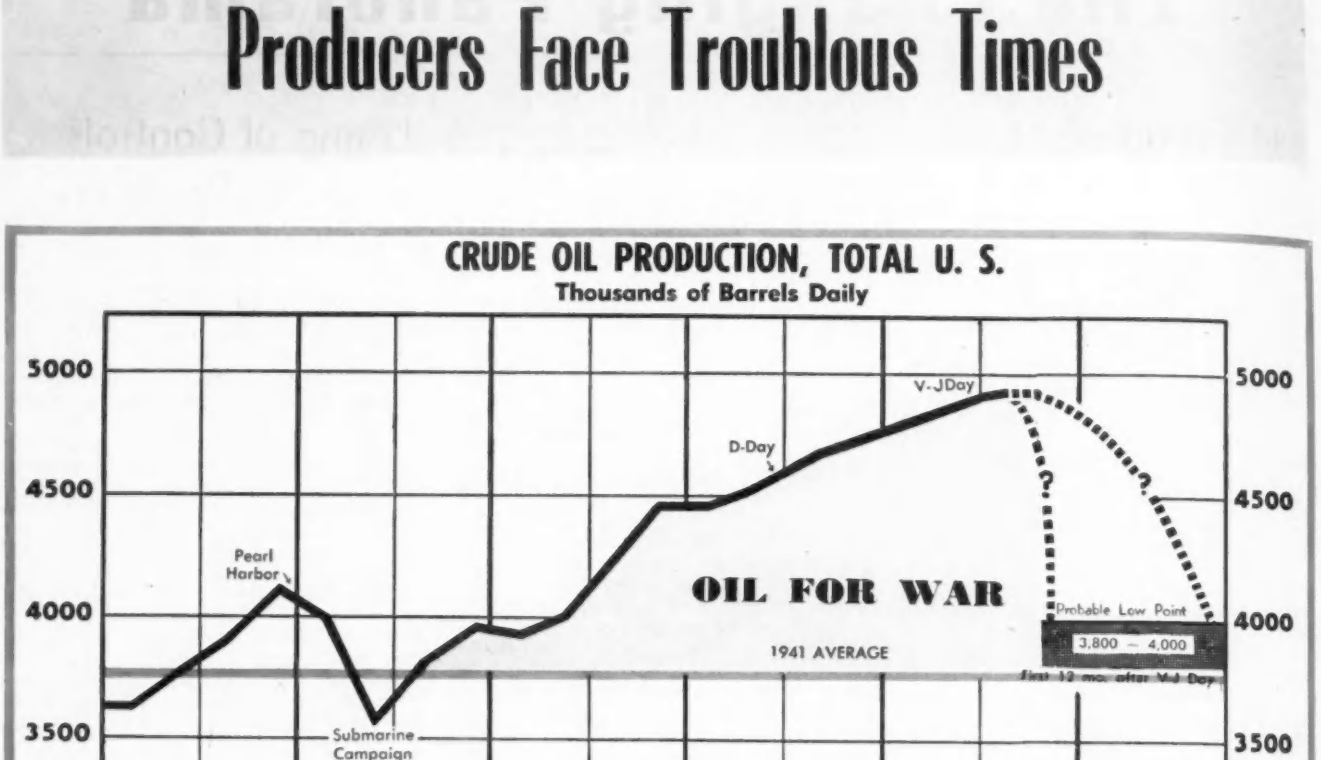
MANY questions affecting the oil industry are due to come up in Congress and other government branches in the near future. For this reason, the suggestion that some sort of all-industry organization be continued into the postwar era is worthy of consideration.

PIWC has ably filled this position during the war, but because of anti-trust laws, cannot be continued with return of peace. The industry has various trade associations, but none representative of all the factions that make up the business. Hence, dissolution of PIWC will leave the industry without a central rallying point to iron out its problems, or to present its views and fight its battles.

An organization made up of representatives from the different trade associations, similar to the United States Chamber of Commerce, the American Automobile Association, etc., might do much good. In this way the forces of the various trade associations could be united.

Questions with respect to a national oil policy, diplomatic protection of foreign operations, international oil agreements, disposition of surplus tankers, and disposal of the big inch pipe lines are certain to come up in the near future —and are matters on which an association of associations might work to the benefit of all.

Producers Face Troublous Times



Difficult problems in war's aftermath can be met best if industry not hampered by wartime controls

By H. C. WIESS, President
Humble Oil & Refining Company

POSTWAR problems of the petroleum industry are sometimes dismissed lightly on the ground that no reconversion will be necessary since the industry can switch from military to civilian quality products overnight. This view fails to take into account the decline in demand that will occur. Petroleum production has expanded so greatly to meet war needs that a substantial decline is inevitable. The large adjustment required in crude oil production may involve even greater difficulties than will be experienced by industries that must convert but are assured of an immediate market for all their output.

Postwar Demand

The relative magnitude of the adjustment that will be required in crude oil output is rather clearly indicated, although the exact level of demand will depend in part upon the speed with which reconversion to peacetime production is carried forward, the policy that may be pursued with regard to meeting military demands for oil out of accumulated stocks and similar facts. At best, the conclusion is inescapable that the petroleum industry will experience a sharp decline in demand sometime during the next 12 months. This is readily apparent from a brief consideration of the probable changes in military and civilian demands.

The reported military requirements of 1,600,000 barrels daily of petroleum represented an expansion of several times the amounts consumed by the armed forces of the United States in 1939. It would be extremely difficult to estimate the actual military consumption of refined producing during the next year. That will depend on the military forces that may be maintained abroad, the rate of demobilization, and other undetermined factors. Military stocks of aviation gasoline, and perhaps some other products, both in the United States and in foreign theaters, are large in relation to immediate demands. Therefore, the armed forces will not need to purchase as much oil as they have been consuming. Within a year, purchase for actual military use may well decline by 60 percent or more from wartime levels.

Civilian demands will increase. Such demands probably will not return immediately to the level of 1941. Industrial consumption of fuel oil and other products will decline as production does, and during the next 12 months may be less than in 1941. The demand for heating oil for homes will increase, but not in large amount.

Fewer Autos

The principal handicap to other civilian consumption will be the smaller number of passenger cars and the higher average age of these vehicles. Passenger car registrations in the United States in 1944 were about 25 million, or nearly 4 million less than in 1941. The average car in 1941 consumed more than 16 barrels of gasoline. The decline in registrations represents the loss of a market that might amount to 175,000 barrels daily. Furthermore, the cars in use now are much older and not driven so much because of their less satisfactory mechanical condition, so that their annual consumption will be lower than in 1941. In view of these circumstances, non-military

The accompanying article is a digest of an article appearing in the July-August issue of the *Humble Way*.

demands for petroleum products during the next 12 months cannot be expected to increase by more than a few hundred thousand barrels daily. This may well fall short nearly 1 million barrels daily of balancing the maximum decline that will take place in military demand.

Domestic demand will be the primary determinant of crude oil production, but the relation of exports and imports also will have some influence. In 1941, exports of petroleum from the United States exceeded imports by only 35,000 barrels daily. Since 1941, there has been an expansion in foreign crude oil production in the order of magnitude of 500,000 barrels daily, or more. The existence of this additional capacity and the pressure of great foreign reserves on the market will make it difficult for this country to maintain any sizable export balance of petroleum. Exports should not be counted upon to cushion the shock of the postwar drop in domestic and military demands, since they will decline as soon as the regular flow of oil in world trade can be resumed.

Stocks Accumulation

Another factor that may influence crude oil production is the accumulation of crude oil stocks. Some additions to stocks may be justified or required because of withdrawals that have occurred during the war. In the past four years, withdrawals of crude oil and refined products have amounted to about 66 million barrels in California and 34 million barrels in the rest of the United States. These areas are relatively self-contained in normal times with regard to petroleum, because of the high cost of transportation between them, so that stocks must be considered separately for the two areas. The additions required to replace half of the withdrawals since 1941 outside of California would average 50,000 barrels daily for a year, or only about 1.5 percent of the estimated production for the region. As demand increases and refinery runs of crude decline correspondingly, there will be less need to rebuild stocks. Postwar production therefore, must be closely related to demand. The major adjustments will be complicated and prolonged further if stock accumulations are too rapid or too large.

Conclusions

It is probable that United States crude oil production will decline to a low point of 3.8 to 4 million barrels daily sometime during the next 12 months. This would be about 20 percent under recent producing rates of approximately 4,900,000 barrels. While it is not clear just when the major decline will occur, it will probably be within three to nine months.

Texas must be prepared for an adjustment greater than the average of the nation as a whole, since it has contributed such a large share of the oil for war. Texas output may reach a low point ranging between 1,400,000 to 1,600,000 barrels daily, or roughly 30 percent less than its recent output of approximately 2,200,000 barrels per day.

It is essential that military authorities and government agencies having influence over its operations keep in mind the prospect for the postwar period and do all they can to keep the industry informed of probable changes in demand and to facilitate the adjustment.

Crude oil producers will face troublesome times within the next 12 months. The abnormal war demands will disappear and market outlets will shrink rapidly. As production declines, the cost per barrel will increase, particularly in Texas and California, because of the lower output per well. The existence of productive capacity substantially higher than demand will create difficult problems and act as a depressing influence on prices. Prompt adjustments must be made to demand as it declines, in order to avoid the over-supply of petroleum that will lead to waste. The nation cannot afford to permit the development of chaotic conditions in the petroleum industry, which would seriously impair its contribution to full employment and its ability to discover and develop new reserves to meet future demands.

Wisdom of Regulation

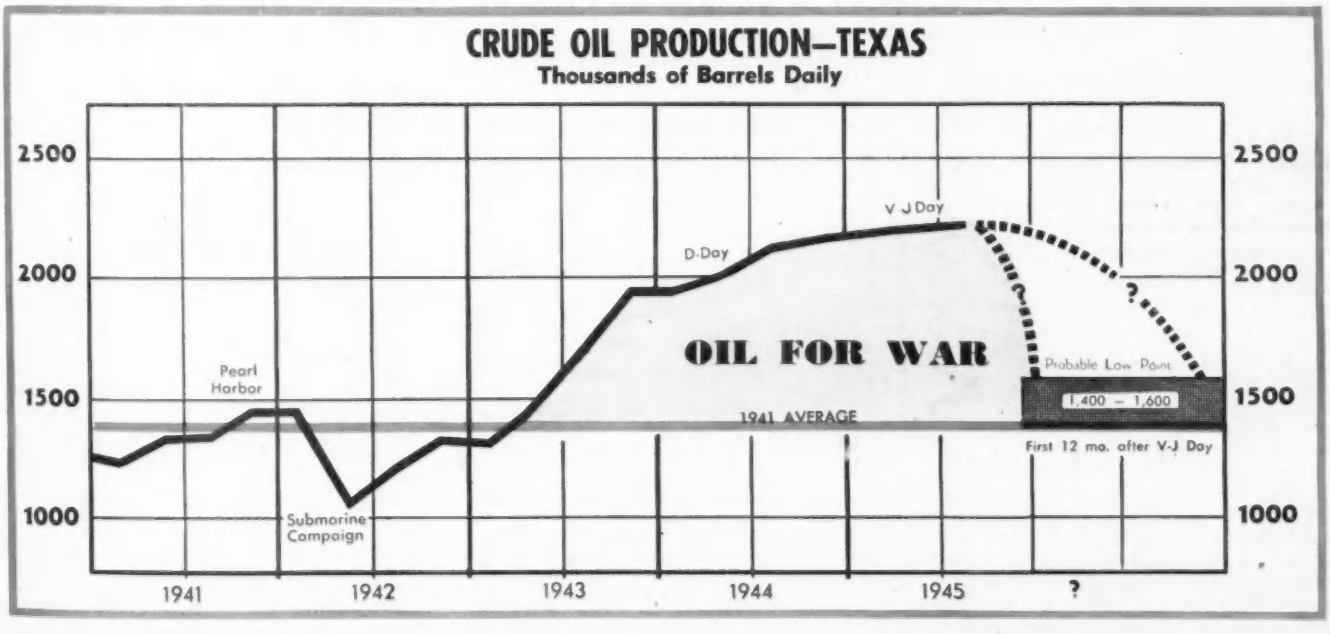
The wisdom of regulating production to market demand in order to avoid waste has been clearly demonstrated during the past 15 years. Without such regulations, the industry never could have supplied the additional amounts of oil required for military purposes in the last four years. The national interest requires, therefore, that the difficult problems of the transition period be met by the industry and the state conservation agencies in such manner as to maintain a vigorous petroleum industry.

Waste Prevention

State conservation agencies have gained much experience since the days of the East Texas field in regulating supply to meet demand. They have developed principles for the conservation of oil and for the equitable allocation of production between fields and properties. The principles and administrative techniques for preventing waste of oil are well developed and can be applied by each producing state. Every producing state must share the responsibility for meeting the postwar adjustment. The Interstate Oil Compact Commission has a role to play by encouraging the cooperative action among the states that will be necessary to the proper solution of production problems. The industry must be alert to the problem, and can facilitate the adjustment by prompt presentation of facts to the state agencies and Interstate Oil Compact and by lending its support to their efforts. Each producer has his share of responsibility in the necessary adjustments.

Ingenuity Needed

The problems will be difficult but not insurmountable. It must be borne in mind that they are an aftermath of war conditions and are as abnormal as the excessive production rates of the past two years. They can be met best by a vigorous, competitive industry that is not handicapped by the continuation of wartime controls. The same ability, ingenuity, and cooperative understanding that enabled the industry to perform great service during the war should prepare it to deal promptly and effectively with these postwar problems.



CALIPER WELL LOGGING

Part 1 Formation Caving

By HUBERT GUYOD
Electrical Well Services Laboratory,
Halliburton Oil Well Cementing Company

A caliper log is a measurement of the changes in the average size of a bore hole, i.e., of the amount of caving exhibited by each formation. A study of the mechanism of caving is therefore advisable if a good understanding of caliper logs is desired. This phenomenon is reviewed in this article and in the one following.

FOR many years it has been known or suspected that the size of a bore hole is frequently different from that of the bit which cuts it. During the early years of drilling for oil in this country by the cable tool method, measurements of the volume of cuttings recovered by the bailer, although made in a very crude manner, revealed that certain formations cave, while others stand.

In the Eastern States, where formations consist of hard, slaty shales and well-indurated sandstones, it was found that certain shales caved appreciably perhaps because of the whipping of the cable against the wall of the hole. When the cable-tool method was applied to much younger formations, such as the unconsolidated sands and shales of the Gulf Coast, serious drilling difficulties arose because of the large amount of formation caving. To overcome this difficulty, it was necessary to use a different drilling technique, the rotary method, which gradually replaced the cable-tool process in areas where relatively soft formations were to be penetrated.

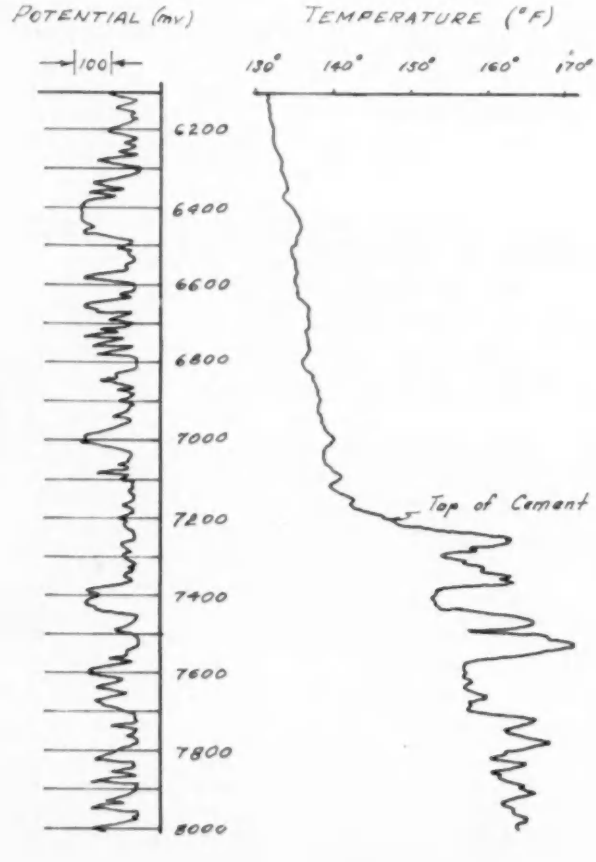


Figure 1. Temperature log made after cementing and showing large cavities in shales (Tepetate, Louisiana).
—Courtesy Continental Oil Company.

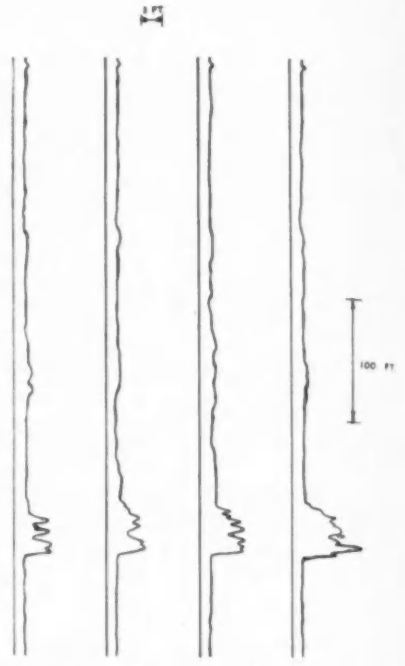


Figure 2. Early caliper logs of a shot-hole made by M. M. Kinley (Glenn Pool, Oklahoma).
—Courtesy M. M. Kinley.

Inasmuch as the rotary method solved satisfactorily a problem which originated from abnormal caving, it is probable that most rotary drillers inferred at first that the new method suppressed caving almost completely. There was no possibility of ascertaining whether this assumption was justified, because an estimation of the size of a rotary hole by making volumetric measurements of the cuttings is difficult with the conventional sampling method.

Experience Shows Error

This erroneous assumption concerning the probable uniformity of the hole diameter, was, however, gradually dismissed when more and more experience was gathered. How the hole was shaped and, if caves existed, where they were located remained, however, for years in the domain of speculation. Many did not think that caving could be a rather consistent property of certain formations, but perhaps an accidental condition due to the manner of drilling wells. Others felt that unconsolidated sands might cave, while shales probably would would not. Still others said certain shales caved appreciably.[2]

Even the introduction of new techniques, such as temperature measurements for locating the position and relative amount of cement behind casing failed to bring the answer to this prob-

this development should have given qualitative data on formation caving. This is illustrated in Figure 1, which shows a temperature log made in 1936 in Tepetate, Louisiana, field. By correlating this curve with the potential graph of the electric log it is apparent that, in the cemented section, the temperature opposite shales is constantly much greater than that opposite sands. It is known now that this difference is due to the presence of more cement in shales than in sands caused by an appreciable caving of the shales and by little or no caving in sands.

Yet, when this log was first published[2] this simple and now obvious explanation was overlooked. Instead, differences in the thermal capacity and conductivity of the various formations were supposed to be the primary factors responsible for the temperature variations observed. It was only in 1940, when actual hole size measurements were made in long-open sections of rotary bore holes that a clear picture of the actual size of the bore was obtained. This picture explained perfectly many of the perplexing failures experienced previously during the drilling operations in which the size of the hole is involved.

Early Calipers

Prior measurements of the size of short hole sections, especially those enlarged by shooting, had been successfully made in 1932 by M. M. Kinley[3] and a few years later by R. B. Bossler.[4] These early tools solved quite satisfactorily the problems for which they had been designed. For example, Figure 2 shows the first hole diameter measurements made by Kinley. The caliper used for this job comprised four independent lem, although a better understanding of arms, each of them actuating a pencil which records the changes in hole size on a revolving cylinder. Figure 2 is a reproduction of the traces given by each arm of this caliper in a shot hole of the Glenn Pool, Oklahoma. Correlation between the graphs given by each arm is excellent, thus proving the reliability of these early measurements.

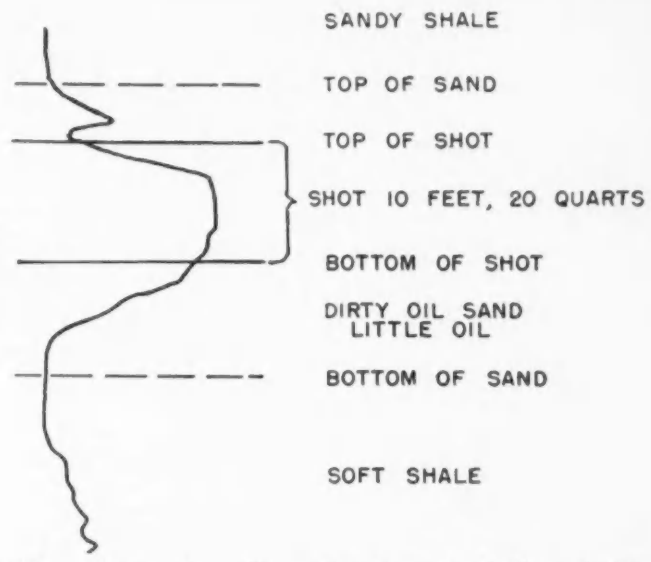


Figure 3. Caliper log of shot-hole made by R. B. Bossler (Oil City, Pennsylvania).

—Courtesy The Producers Monthly.

Shortly thereafter, Kinley improved the recording mechanism of his first instrument by gearing a variable electrical resistor with the arms and measuring, at the surface, the resulting changes of current in a circuit in which the resistor and a battery were inserted.

Bossler's caliper was also electrically operated, and the record was made at the surface. Figure 3 is a reproduction of the graph Bossler obtained in the First Venango sand of an input well (secondary recovery) near Oil City, Pennsylvania. The well was shot for the purpose of increasing its input capacity. The straight sections near the top and bottom show a normal hole size of about 6 inches. In the section shot, the hole is considerably enlarged. The straight section of the graph in the enlarged zone indicates that the size of the hole is greater than the range of the instrument, i.e., more than 28 inches in diameter.

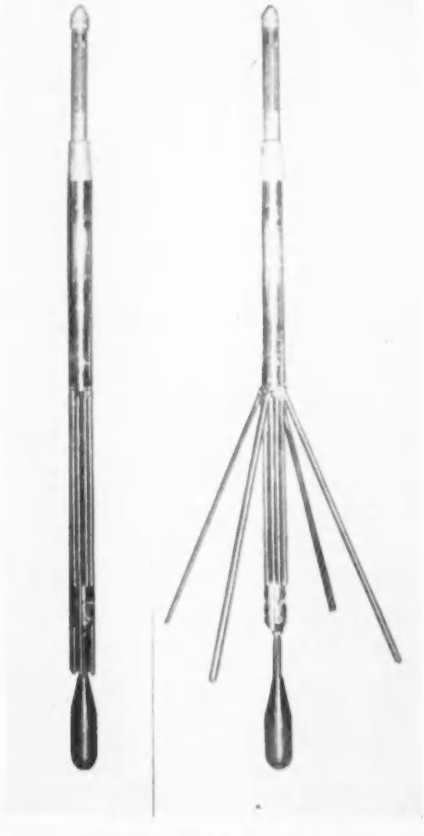


Figure 4. Modern caliper with arms closed and arms open.

Modern Caliper

These early tools were well adapted to the investigation of short sections of relatively shallow wells, but they were not very convenient for logging rapidly and continuously the very long open sections of present day rotary holes. For this reason, in cooperation with M. M. Kinley, the Halliburton Company designed in 1940 a tool which could be run in very deep wells, and the operation of which was similar to that of electrical logging. This tool is shown on Figure 4. It comprises four spring-driven arms which contact the wall of the bore hole. The motion of these arms is transmitted to a rheostat inside an oil-filled chamber in such a way that the changes in electrical resistance are proportional to the changes in average diameter as measured by the four arms. Because of the spring tension against the arms, the tool is approximately centered in the well. The latest calipers are six feet long and three inches in diameter.

The caliper is mechanically and electrically connected to a well logging cable and the diameter changes are recorded on film as a calibrated caliper log. Field operations are made as follows: The tool with its arms closed (left side of Figure 4) is lowered to the bottom of the well. The arms are electrically or mechanically released (right side of picture) and the tool is raised at a speed of approximately 100 feet a minute while logging proceeds.

The tool is so designed that the log gives the mean diameter at any point of the hole. This average value provides the necessary data for solving all common problems. It is felt that the construction of a more elaborate tool giving the exact shape of the hole is not warranted at present.

When originally designed, it was thought that a bore hole caliper would be used mostly for the computation of the quantity of cement necessary to cement properly a given length of casing. It is apparent now that caliper logs can be used for many other purposes. These will be discussed in a later article. As time goes on, it is probable that the list of applications will be continually enlarged. Progress will be possible along this line when the mechanism of formation caving and the influence of all pertinent factors are fairly well understood. Our present knowledge along these lines has been gathered mostly from random observations. For this reason it is rather limited and considered still insufficient to allow a good understanding of the process.

Formation Caving

The factors which are thought to cause formations to cave or stand are tentatively listed below:

Action of the drilling fluid.
Action of the bit.
Action of the drill pipes.

The influence of these agents is different for each type of formation, and in many cases only the resulting effect of these factors can be ascertained, which complicates the investigation of the phenomenon of caving.

Action of the Drilling Fluid

The drilling mud has both a chemical action (hydration) and a physical action (erosion, dissolution) on the formations penetrated.

The deleterious action of water base

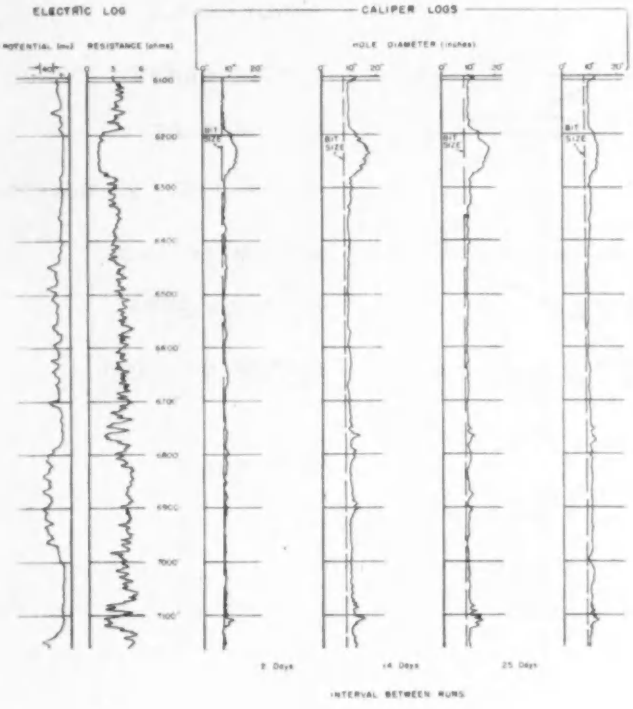


Figure 5. Electric log and caliper logs of a well of Cherokee County, Texas, showing changes in hole size with time.

mud on shales has been known for several decades. According to the type of shales drilled, this action results either in a swelling (heaving shales) or in a disintegration.

As water is the agent which is responsible for these conditions, its action is frequently termed hydration, although it is possible that no actual hydration reaction takes place. Present day rotary holes are drilled with a mud which reduces hydration sufficiently so that no difficulty is usually experienced in the drilling and completion of a well. Nevertheless, caliper logs reveal that there are still many shales which disintegrate appreciably. A diameter of 20 inches in holes drilled with a ten-inch bit is not infrequent. In certain shales, the disintegration increases with time at first, until perhaps a protecting layer is built up on the face of the formation. Thereafter, the size of the hole remains substantially constant, or even decreases. This is illustrated in Figure 5 showing the electric log and four caliper logs made in an East Texas well. An increase in hole size in shales can be observed between runs 1 and 2 made at a two-day interval, and a decrease between runs 2 and 4 made 39 days apart.

In other shales, the hole size increases continuously with time, although sometimes slowly. This continuous increase may be due to the fact that the drilling mud used is unable to control the disintegration of this particular type of shale.

In order to suppress, or at least, reduce the disintegration of certain shales, special drilling fluids are occasionally used, such as oil base mud. This has proved beneficial in specific cases, but is not a universal solution of the problem. As a matter of fact, certain shales slough very badly when oil comes in contact with them, and it is then necessary to return to a water base mud to obtain proper drilling and completion operations.[5] Adding salt to water base mud is beneficial for drilling certain shales. Salty muds, however, are usually objectionable for other reasons, and are rarely used, except when mixed with other chemicals for the drilling of heaving shales.

The foregoing short description suffices to show that, as far as caving is concerned, there are several categories of shales. Because of regional sedimentation changes, the character of a shale varies rather rapidly. Up to now it has not been possible to find a constant relation between caving, area, age of shales, etc. The only reliable observation which has been made is that, for any shale, the amount of caving is fairly the same in all wells of a given field, all other conditions remaining approximately the same (duration of drilling, type and size of bit, mud, etc.).

Sands, limestones, and other formations whose constituents do not react chemically with water are not subjected to the type of disintegration found in shales.

Mud Erosion

In this section, the mechanical action of the mud stream will be termed "Mud Erosion." The wearing away of formations by the action of the mud circulating in the bore hole is small and probably negligible, unless perhaps the velocity of the drilling fluid is abnormally high. This is evidenced by the fact that sands, even if unconsolidated, usually are not eroded, although the velocity of the mud stream opposite them is greater than opposite beds which cave. It is well to remember, however, that the presence of a mud cake on the face of sands might conceal a small amount of caving.

In holes drilled with certain types of mud (oil, sodium silicate), not only the sands, but also many shales stand fairly well, which seems to indicate that mud erosion is small. This is illustrated in Figure 6 where the caliper log to the left was made in a well (A) drilled with conventional mud. The log to the right was obtained in a well (B) of the same field but drilled with oil base mud. This fluid was replaced by water base mud about 48 hours before the measurements were taken. In many sections of well B, even in shales, the hole size equals the size of the bit, whereas the corresponding sections of well A cave appreciably. It is likely that the difference between the hole size of these two wells is caused by the difference in drilling mud. There is obviously some caving also in well B and it is assumed that this was caused partly by the recent action of the water base mud on the formations.

These two logs suggest the following conclusions:

1. Mud erosion is probably small.
2. Water base mud is very likely responsible for a great amount of the caving observed.

There are a few instances, however, where mud erosion seems to be responsible for hole enlargements, especially in non-consolidated formations. Figure 7 is a chart embodying caliper and electric logs of the shallow formations of a well in the Conroe, Texas, field. The caliper log was taken when the well was about 2600 feet deep. It shows that several fresh water sands cave appreciably, while many shales do not. Mud erosion

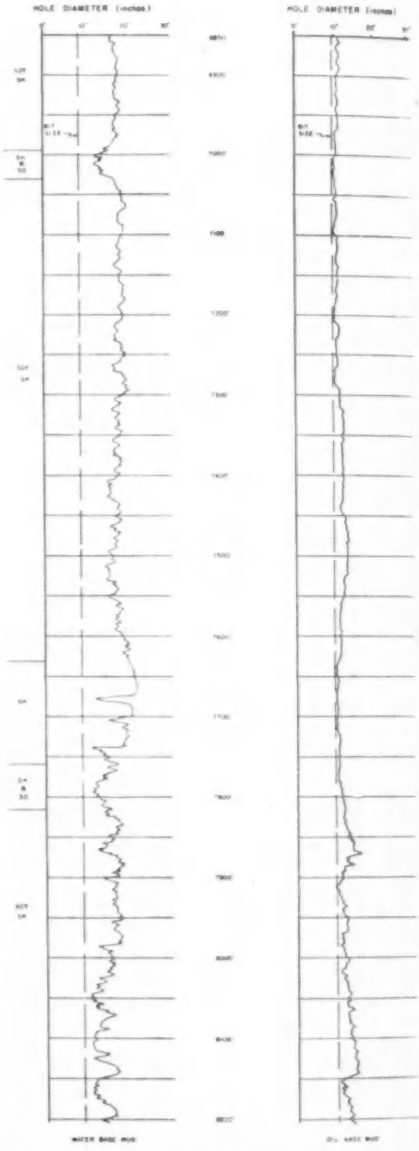


Figure 6. Caliper logs of two wells in the Mercy field, Texas, showing the influence of the type of mud on caving.

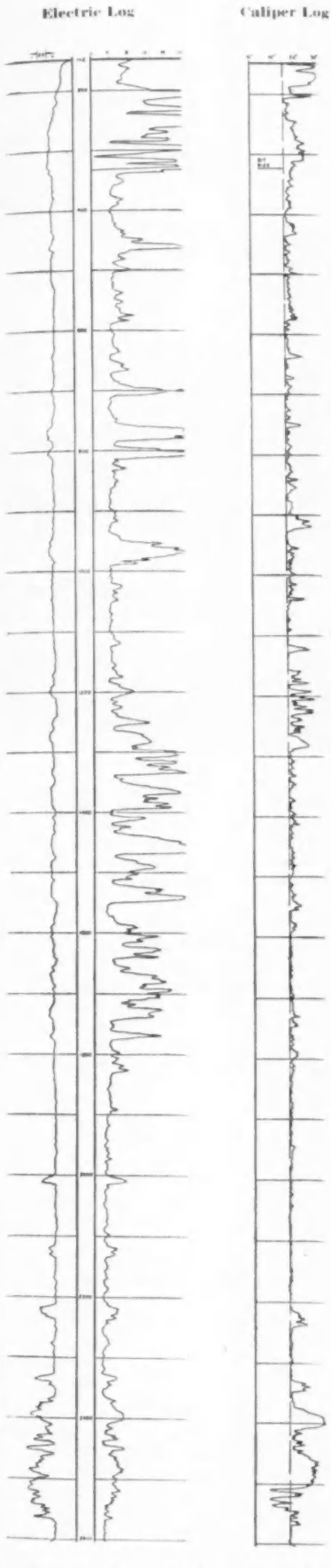


Figure 7. Electric log and caliper log of a shallow hole of the Conroe area, Montgomery County, Texas, showing irregular caving in shales and in sands.

—Courtesy The Atlantic Refining Company.

seems to be the best explanation for the larger caves opposite some of the sands. This example is particularly interesting because many cores were taken in this well. This allowed perfect identification of many sands, such as the section found at 2215-2235 feet. Whether this caving also is related to the unusually large size of the bit used—15 inches—is not known, but not very likely.

Dissolution

Unless a saturated brine is used as drilling fluid, salt sections exhibit a considerable hole size because of the continuous dissolution of the salt section by the mud stream. This gives the hole a characteristic carrot shape.

Anhydrite, the solubility of which is only about 1/200 that of salt, is not appreciably dissolved by drilling mud, and the hole diameter in thick anhydrite beds is usually very close to bit size.

Sands, limes, etc.—are insoluble in water and are therefore not dissolved by drilling muds.

It is likely that, under normal drilling conditions, the influence of the type of bit used, that of the drilling speed, etc.—are small and negligible compared to the influence of the mud.

Under certain conditions, however, the bit might be responsible for enlargements of the hole in thin sand sections, especially when those beds are comprised in thick caving shales. In such cases, caliper logs show that the hole size in these thin sands is appreciably greater than bit size, although less than in shales. It is probable that at least part of this increased hole size in sands is caused by the bit knocking off the sand ledges when the non-guided drill pipes are lowered in the hole at a relatively high speed (round trips). Such a case is illustrated in Figure 8 showing a long shale section from 7550 to 7930 where many sands—shown by arrows—exhibit an abnormally large hole size.

In sections where sands predominate, or in zones consisting mainly of shales which do not cave appreciably, the hole diameter in sands equals approximately that of the bit in the majority of cases.

When long sections of drill pipes are run in compression opposite thick shale sections which cave appreciably or which have a tendency to disintegrate easily, the resulting spiralling of the pipes probably increases the amount of caving, especially at the points of maximum wobbling. Part of the caving shown at 7550-7930 in Figure 8 might have been caused by pipe wobbling, although this, of course, cannot be ascertained.

Equally difficult to ascertain is whether the damaging effect of wobbling is initiated by caving, or the large caving of certain shales is caused by wobbling. If this were known, proper measures such as reconditioning of the mud—to prevent caving—or drilling with little compression on the drill pipe—to prevent wobbling—could be taken in order to decrease drilling troubles.

Two other effects of the drill pipes on caving, although wholly indirect, are worth mentioning. One is caused by the failure to fill up the hole with mud when the pipes are pulled out. This results in a decrease in the hydrostatic pressure exerted on the formations, which causes an inflow of salt water into the hole from low pressure sands. Sometimes this added salt contaminates the mud sufficiently to cause greater disintegration of certain shale sections.

Another detrimental effect caused by the withdrawal of the pipe from the hole is the swabbing action of the drill pipes which probably accelerates the caving of shales which are particularly brittle.

Miscellaneous Factors

The mechanism of formation caving is so little understood at present that many of the statements included in the preceding discussion will need be modified when more data becomes available. Also more factors than those listed above will probably have to be taken into account to obtain a clear picture of the phenomenon. For instance, the characteristics of the formation itself, such as natural brittleness, have to be taken into account. A few of these factors will be discussed in a later article.

Finally, it should be mentioned that unusual drilling conditions frequently cause appreciable hole enlargements. Among those, fishing jobs, salt water intrusion and crooked holes probably are the most frequent.

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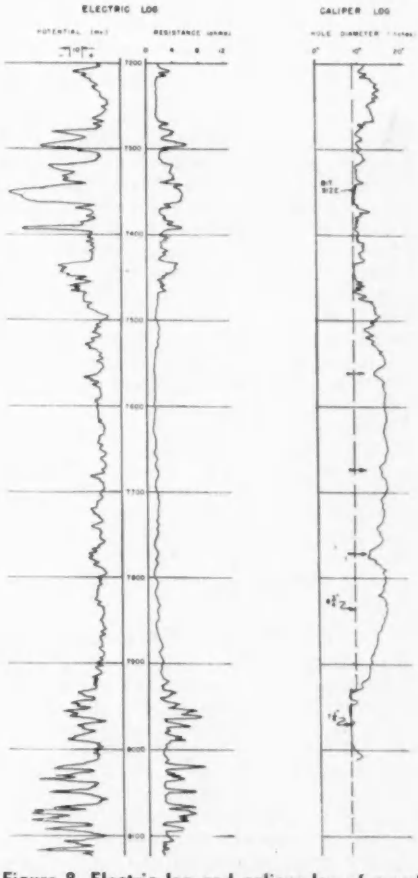
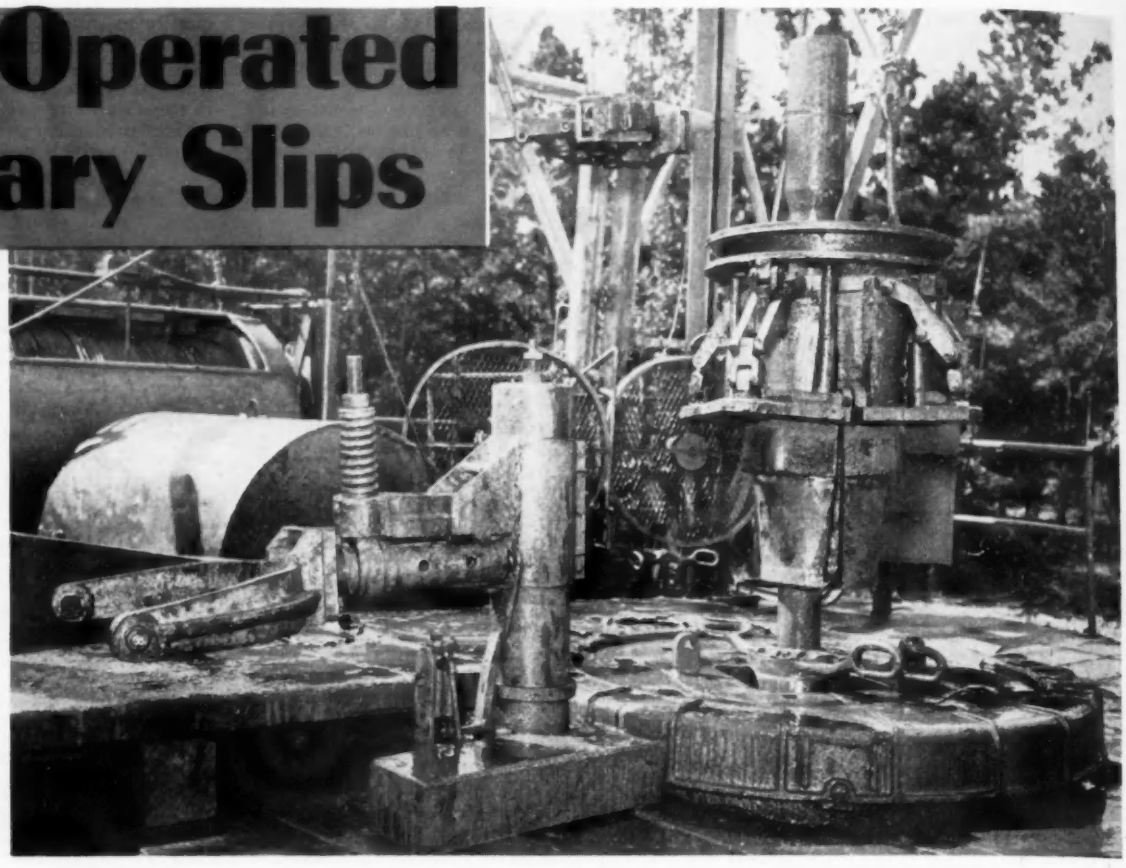


Figure 8. Electric log and caliper log of a well in the Willamar field, Willacy County, Texas, showing hole enlargement in thin sands situated in a thick shale section.

—Courtesy Sun Oil Company.

Air-Operated Rotary Slips

By
ELTON
STERRETT



Suspended over the drill pipe string by the derrick line, the air-operated slips are lowered over the pipe while conventional slips hold the string. The entire lifting arm is swung around on the cylinder to clear the rotary table until the automatic slips have taken the load off the string. The design of the arm is clearly evident here, the yoke being carried by the eye bolt through the coiled spring, the locking pin at the heel being withdrawn to show it more clearly. At the ends of the yoke are the two rollers which engage the lifting ring groove.

ANY transfer of the handling of 27 tons of equipment from hand work to mechanical lift on an 11,000-foot well, even though that lifting be distributed among three crewmen, is a worthwhile contribution toward lessening the drudgery which long has been accepted as part of the life of the rig floor men. Yet that, in effect, is the result easily obtained through the substitution of compressed air for back muscles in the withdrawing of slips when the string of 360 joints of drill pipe is pulled from the hole and laid down on a Gulf Coast rig. An average set of slips weighs in the neighborhood of 150 pounds, and must be placed and lifted free for each joint of pipe. This gives a total of 54,000 pounds of slips which must be hoisted out of the bushing during the run, the average lift being over a distance of 12 inches.

Experimental Measures

To eliminate the hand-placing of slips, many types of equipment have been experimentally developed. One involved a lifting ring and paired counterbalances being effective in clearing the slips from the bushing, but cluttering the table with so much gear that it was difficult to place and operate the tongs for making up or breaking out pipe joints. Another design attempted to utilize the lifting of the pipe to bring the slips from the bushing, a clutch jaw being released when the bushing was cleared, the crew member being supposed to land the slips on the rotary table ready for canting back into the hole for the next joint. For various reasons, none of these devices stood the test of operation, and it was not until compressed air was harnessed to do the lifting that the manual age of slip-handling was outmoded recently.

The air-operated slips now on the equipment market are carried on a special bushing which fits in the rotary table in place of the kelly drive unit. This bushing, made in halves, affords as much clearance for tool joints and pipe protectors as does the bottom of the aperture through the rotary table, and thus does not call for a reduction in the speed of running pipe. Toggled to each of these halves of the bushing are two of the slips, the toggles being so arranged that the slips tend to slide down within the bushing parallel to the axis of the pipe, the face or jaw section serving as guide, while the heel of the toggle yields to afford necessary clearance.

Compressed air applied to lifting slips when making round trip is time and effort saver

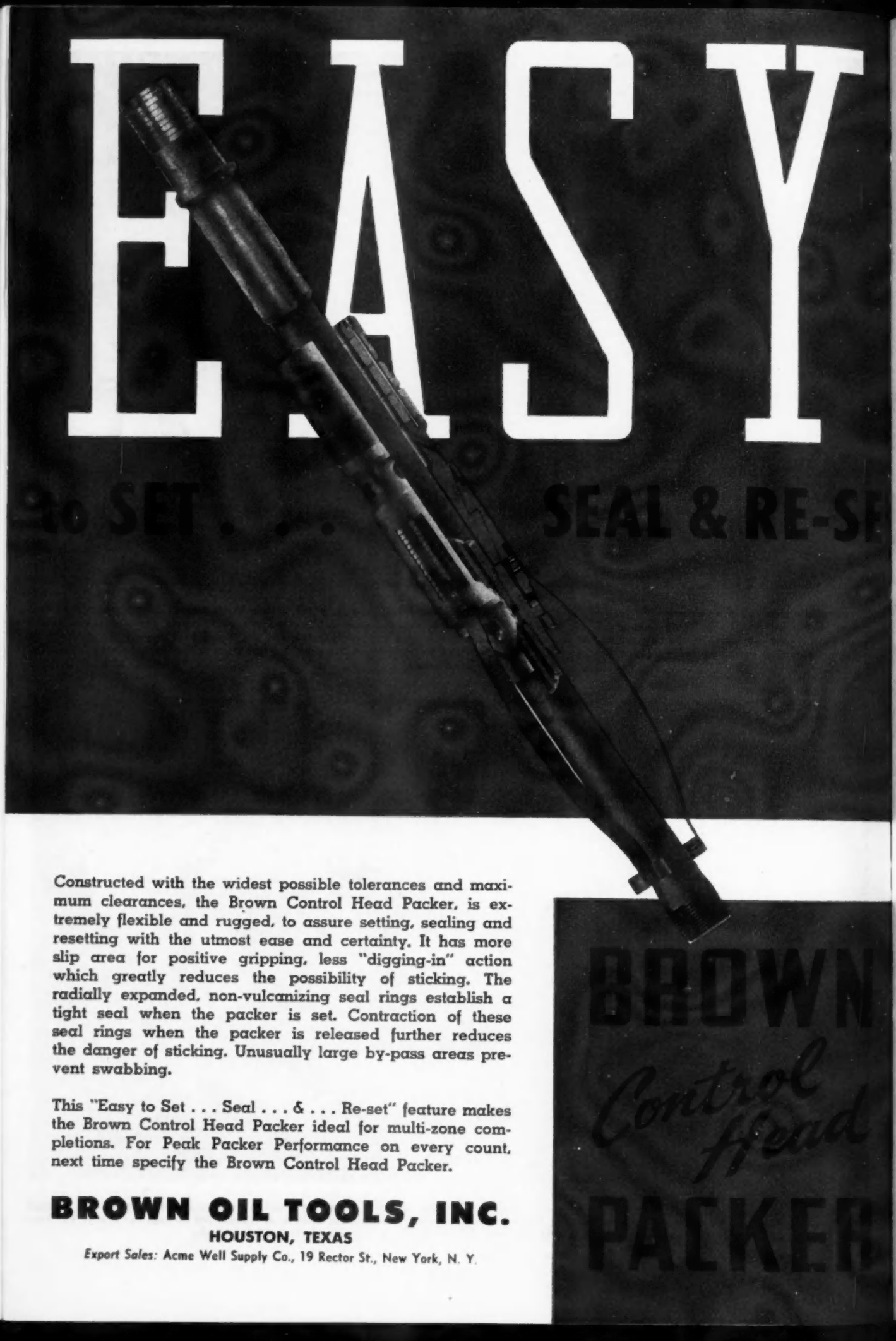
The slips are designed to almost clear the top of the bushing when fully retracted, again giving a clear opening which compares with that through the table. Each slip, being individually supported on a linkage with three pivot points, is free to swing out of the way if struck by a protector or tool joint, and thus there is no tendency for the slips to hang or ride a string of pipe, even if the block be swinging through quite an arc, or if the stand tends to align itself off center with respect to the opening through the table.

Lifting of the slips from the bushing, when the weight of the pipe string is removed, is accomplished through a ring which rides free above the slips, being linked to each through a short toggle which is pinned to the center of the long arm in the spotting device. When this ring is lifted to the limit of its travel, the slips are fully retracted. Its downward travel is to the point where the slips have engaged the pipe and are carrying the load of the pipe in the hole. Guide sleeves and corresponding pins maintain alignment of ring and bushing and prevent extreme canting of the unit, with consequent misalignment or cramping of the slips.

The lifting unit of the air-operated slips consists of a five-inch diameter cylinder set between the drawworks and rotary table, and bolted to the latter for support and stability. This cylinder carries an arm which may be rotated through 360 degrees in order to clear the

The automatic slips now have assumed the load of the pipe in the hole, and the lifting ring is at the bottom of its travel, being supported by the toggles on the individual slip lifting linkages. The cylinder is being rotated, with the joint in the arm "broken" to permit the crew to guide the rollers on the yoke into place in the ring groove. At the left of the cylinder is seen the safety catch, the dog being held against the cylinder by spring pressure and engaging the welded collar so that the cylinder can go no lower. A bar equalizes leverages so that the arm may be guided and placed easily.

Showing the clearance between tool joint and the slips, this view also demonstrates the manner in which all slips are withdrawn equally through the balancing effect exerted by the lifting ring on the individual toggles. Air pressure in the cylinder is transmitted through the arm to the base of the spring, thence to the nuts atop the eye bolt, and eventually to the linkage controlling each slip.



Constructed with the widest possible tolerances and maximum clearances, the Brown Control Head Packer, is extremely flexible and rugged, to assure setting, sealing and resetting with the utmost ease and certainty. It has more slip area for positive gripping, less "digging-in" action which greatly reduces the possibility of sticking. The radially expanded, non-vulcanizing seal rings establish a tight seal when the packer is set. Contraction of these seal rings when the packer is released further reduces the danger of sticking. Unusually large by-pass areas prevent swabbing.

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table entirely during drilling operations. The arm in turn supports the yoke which actuates the ring, the yoke being carried on a heavy spring and cylindrical bearing in such a manner that it may cant to permit the yoke rollers to follow the groove in the lifting ring without binding.

When setting the slips it is necessary first to hold the string with the conventional slips until the kelly has been broken out. Then, after the bushing and ring have been lowered over the projecting pipe by the derrick line, the kelly is again made on, and the string lifted to permit withdrawal of the hand slips and substitution of the others. With the automatic slips now in place, the kelly is again placed in the rat hole. To engage the yoke in the lifting ring, the arm is rotated around the cylinder, and at the same time a pronged bar is inserted into the shank of the yoke so that it may be swung out of alignment with the arm. By means of this joint, the lifting rollers are engaged with the ring groove, and the arm members then again aligned to give a direct lift by the spring, with the end of the arm cushioned against a pad at the heel of the supporting member, where it is pinned to prevent accidental shifting during operation.

Instead of the placing of the slips being a job for the floor men, as is the custom when using conventional slips, the driller is not only in charge of the slips, but actuates them through a triple air valve, mounted convenient to the left hand, while the right is left free to control the brake.

Air pressure is admitted to the five-inch lifting cylinder while the weight of the pipe is still on the slips. At the same time a bypass from the cylinder line admits air to a small piston actuating a lever which normally is held against the cylinder by a spring. With air pressure on this unit, the latch is held in the clear, and the cylinder is free to descend. The cylinder, now under air pressure—maintained at 150 pounds per square inch by the compressor—exerts that pressure over the entire area of the head and as a result the unit, through the spring on top of the arm, actually seems to strain and set itself for the freeing of the slips as soon as the weight of the string is taken by the elevators.

The actual freeing of the slips is accomplished so quickly that they seem to be flipped from the bushing by the pipe. They remain suspended at maximum clearance until the air in the cylinder is released by the driller through the control valve. The mechanism—arm, ring and slips—then drops into place, the slips guided by the pipe, the arm by the cylinder. Gravity alone sets the slips, as with other types, and the grip of the inserts against the pipe carries them to the desired bearing pressure.

The air demand of the units is surprisingly small. A two-stage garage-type compressor, set to compress to 150 pounds pressure, more than keeps ahead of the air demands of the unit, only a half-inch line being run from storage tank to the lifting cylinder.

The control valve at the driller's stand gives centralized control of all equipment and enables the brake and air to be synchronized to take advantage of every available second of time when running pipe. The handle is moved to admit air to the lifting cylinder in advance of the taking of the load by the elevators, allowing full pressure to build up against the toggles before the slips are freed by the upward movement of the pipe. The actual clearing of pipe by slips is almost instantaneous, and without shock to unit.

Air pressure released, the slips now have the load of the string, while the driller prepares to spin the pipe through the rotary drive from the drawworks countershaft to break out the joint. The tongs have been swung aside from this view to permit clear view of the manner in which the toggles function to permit the slips to find their bearing within the bushing. The lifting rollers in the yoke carry only contact load as the unit revolves with the table, the weight of the arm being supported on the coiled spring so as to permit flexing of the arm as the ring is revolved.

$50 Millions Will Be Spent on

Southwest Gas Conservation

By WELDON HILL, Staff Writer

PLANS for large-scale postwar expansion of gas conservation in Texas, Louisiana, and New Mexico are fast taking shape. Indications are that plants under construction or will be constructed immediately will call for an expenditure of more than 50 million dollars. Natural gasoline, recycling and pressure maintenance plants are involved.

Such an aggressive construction program indicates a rapid trend toward gas conservation, especially flare gas. The trend toward utilizing all gas possible will continue to increase, consequently the present estimate of expenditures is conservative. This will eliminate the waste of many millions of cubic feet of natural gas now being vented.

Increased gas and condensate field discoveries in the past two years, plus emphasis placed on proper gas conservation measures during the war, have tended to make operators more conscious of the need for greater utilization of gas. Both federal and state authorities have cooperated in encouraging this trend. PAW regulations have required specific authorization to produce any gas or condensate well.

West Texas

Much of the new construction is planned in West Texas where considerable gas is vented.

Shell Oil Company is planning to erect a natural gasoline plant in the TXL field, Ector County, with a daily capacity of 30 million cubic feet. This gas will come from oil wells, with the plant residue gas being made available for commercial consumption.

In the Keystone field, Winkler County, Gulf Oil Corporation is reported planning a combination high and low pressure natural gasoline plant. This plant will take gas from both oil and condensate wells and make the stripped gas available for commercial pipe lines.

Phillips Petroleum Company is increasing the capacity of its plant in the Fullerton field, Andrews County, from 15 million to 22 million cubic feet daily. This additional 7 million cubic feet of gas daily will come from oil wells now flaring the gas. The company will deliver an estimated 12 million cubic feet of gas daily to Cabot Carbon Company's carbon black plant.

Texas Panhandle

Several companies are stepping up the capacity of plants in Panhandle fields.

Texoma Natural Gasoline Company is increasing the capacity of its Stinnett natural gas and field compressor plant, Moore County, by 80 million cubic feet daily.

Also in Moore County, Phillips Petroleum Company recently completed an addition to its Sneed plant.

Phillips is preparing to increase the capacity of its Hansford County stripper plant, on the Texas side of the Hugoton field, from 83 million cubic feet daily to 133 million cubic feet daily.

Skelly Oil Company and Cities Service Oil Company are near completion on a high pressure plant in the Pampa-Kingsmill field, Gray County. They will repressure oil producing formations in the West Pampa field with 7 million cubic feet of gas daily. Additional construction is also planned in this area by these operators.

Upper Texas Coast

The Upper Texas Gulf Coast is coming in for its share of new construction in the gas conservation program.

Gas conservation projects have been announced by Humble Oil & Refining Company for the West Clear Lake, Friendswood, Anahuac, and Lovell Lake fields.

The plant at West Clear Lake will process 5 million cubic feet daily from Clear Lake, 20 million cubic feet from Friendswood, and 6 million cubic feet from the Dickinson-Gillock field. This plant is expected to recover 25,000 gallons of liquid products daily.

The plant to be erected at Anahuac will have a capacity to process 12 million cubic feet of gas daily and recover 5400 gallons a day of liquid products.

The Lovell Lake project involves the installation of additional compressors to gather 4½ million cubic feet of gas daily and to boost the pressure so the gas may be delivered to a transmission line already connected with the field. Additional equipment also will be installed by Humble in the North Crowley field of the Louisiana Gulf Coast which will deliver approximately 8 million cubic feet of gas daily into transmission lines.

These projects represent an expansion of Humble's gas conservation program which has been carried on for a number of years. The most important project by Humble last year was the installation of equipment at Tomball to conserve 8 million cubic feet of gas daily by compressing it for gas lift and delivery to gas lines. Humble said the shortage of critical materials during the war prevented the development of other projects previously.

The gas which the West Clear Lake and Anahuac plants will process is being produced from oil wells. Completion of these projects will make possible full utilization of all the gas produced with oil in these fields.

In the Hastings field, Brazoria County, Stanolind Oil & Gas Company has filed application with PAW for construction of a major natural gasoline-pressure maintenance plant. The plant will have a capacity of 30 million cubic feet daily. The plant will have facilities to put stripped gas back into the Lower Frio sand, a separate reservoir. Construction will eliminate most of the gas now being flared.

Glenn H. McCarthy is nearing completion on his combination high and low pressure gasoline plant in the Winnie field, Chambers County. The low pressure unit will have a capacity of 35 million feet daily, while the high pressure capacity will be 50 million cubic feet daily. The plant residue will be placed into transmission lines.

Shell Oil Company is about ready to place on stream its recycling plant in the Sheridan field, Colorado County.

Plans are also going forward on Shell's plant in the Brushy Creek and Hope fields of DeWitt and Lavaca counties.

The Katy Operators Committee is preparing to install a low pressure gathering system to connect with oil wells in the Katy field, Waller County. It will have a capacity of 12 million cubic feet daily. The gas will be delivered to commercial transmission lines.

Southwest Texas

The conservation of gas in Southwest Texas and the Lower Texas Coast also is being increased.

Sinclair Refining Company is preparing to pipe residue gas from the East White Point field, San Patricio County, to its refinery at Corpus Christi to be used as fuel. This will utilize about 4½ million cubic feet of gas daily now being flared.

The La Gloria Corporation is installing a large extension to its cycling plant in the La Gloria field, Jim Wells County.

In the Agua Dulce-Stratton area, Nueces County, the Chicago Corporation is installing a second low pressure natural gasoline extraction plant. This plant will take about 10 million cubic feet of gas daily from oil wells which previously was flared. This area has 3 recycling plants. Southern Minerals Corporation recently completed an extraction plant which is utilizing gas from oil wells.

Barnsdall Oil Company is constructing a gathering system and compressor plant in the Placedo field, Victoria County. The capacity will be 7 million cubic feet daily with the gas being turned into lines of the Tennessee Gas and Transmission Company.

In the Rincon field, Starr County, Continental Oil Company and Rice Institute are constructing a recycling and pressure maintenance plant which will be in operation within a few weeks.

Plans are also being outlined by interested operators for the construction of a recycling plant in the North Pettus-Burnell area of Bee County.

Gasoline Production Company is installing a recycling plant in Bee County to serve the Ray, South Mineral, and West Tulita fields. Much of the equipment being used in this construction

came from a similar plant in the Grapeland field.

Plans have been announced for a cycling plant in the Chapel Hill field, Smith County, East Texas, by the Shell Oil Company and Lone Star Producing Company. This plant will be designed to process and reinject 35 million cubic feet of gas daily from the Paluxy sand. An additional 20 million cubic feet daily will be processed from the Pettit and Rodessa zones but not repressured.

In the Gregg County part of the East Texas field, Sinclair Prairie Oil Company is increasing facilities at its Plant 18 to strip 4 million cubic feet daily now being flared.

Charles A. Schwartz and associates are building a low pressure natural gasoline plant in the Quitman field, East Texas. This plant will have a capacity of 1½ million cubic feet of gas daily.

Construction is under way on three natural gasoline plants in the Carthage field, Panola County, East Texas. These are being built by United Gas Pipe Line Company, Chicago Corporation, and Arkansas Fuel Oil Company, United's plant will have a daily capacity of 100 million cubic feet daily, Chicago's 125 million cubic feet daily, and Arkansas' 35 million cubic feet daily. Residue gas will go into natural gas transmission lines.

Hydrocarbon Research, Inc., is planning construction of a new-type plant in the Carthage field which will be designed to liquefy gas into natural gasoline. Proposed capacity is 70 million cubic feet.

Arkansas Fuel Oil Company is increasing the capacity of its plant in the Gregg County portion of East Texas.

Other Areas

The El Paso Natural Gas Company is reported installing compressor facilities at its Jal 2 gasoline plant in Lea County, New Mexico. The new construction is designed to compress 7 million cubic feet daily of residue gas, now being flared, for delivery into its 16-inch transmission line.

In Louisiana, The California Company and the Carter Oil Company are reported outlining plans for the construction of a cycling plant in the Lake St. John field of Concordia and Tensas parishes.

Haynesville Operators Committee is increasing the capacity of its plant in the Haynesville field, Louisiana, from 16 million cubic feet daily to 22 million cubic feet daily.

The Anchor Gasoline Corporation is installing additional compressors at its plant in the Cheneyville field, Avoyelles Parish, to increase its take from oil wells by 6 million cubic feet daily.

The Texas Company has completed an addition to its cycling plant in the Bateman Lake field, St. Mary's Parish.

Continental Oil Company also is extending its pressure maintenance system in the Ville Platte field, Evangeline Parish.

Oklahoma Plans

In Oklahoma the most important pressure maintenance project at the moment concerns plans for the Big West Edmond oil field which has more than 640 producing wells averaging approximately 80,000 barrels daily. With Phillips Petroleum Company taking the lead, operators in the field are studying the most effective means of maintaining pressure in the Central Oklahoma pool, either through gas injection or water flooding. No decision on the technique to be applied has as yet been reached, but it is believed actual pressure maintenance operations will be under way sometime next year. Oklahoma's new unitization measure promises to encourage repressuring and other secondary-recovery methods although operators, for the moment, have announced no plans for expansion.

In southeastern Kansas, particularly in the so-called shallow shoestring areas of northern and western Greenwood County, operators are not only maintaining present projects but plans are being made to initiate additional work. The importance of pressure maintenance and secondary-recovery operations is being recognized more and more and engineers in touch with this phase of production believe that individual operators, as well as major companies, will give closer attention to possibilities in old stripper areas.

Pitot Tube Table for Testing Open-Flow Gas Wells

Volumes given in table are in thousand cubic feet per 24 hours for a gas of .60 sp. gr. flowing into the atmosphere at 14.65 pounds and 60° F. through a one-inch pipe. Multipliers are given for correcting to other pipe sizes. In the accompanying table specific gravity and temperature multipliers are given.

Specific Gravity and Temperature Factors for Use With Pitot Tube Tables

SPECIFIC GRAVITY FACTORS Factor = $\sqrt{\frac{0.60}{\text{Sp. Grav. of Gas}}}$				TEMPERATURE FACTORS Factor = $\frac{460+60}{460 + \text{observed temp. of gas}}$			
Sp. Gr.	Factor	Sp. Gr.	Factor	Temp.	Factor	Temp.	Factor
.560	1.0351	.860	.8353	40	1.0198	82	.9795
.570	1.0260	.870	.8305	45	1.0147	83	.9786
.580	1.0171	.880	.8257	50	1.0098	84	.9777
.590	1.0084	.890	.8211	55	1.0048	85	.9768
.600	1.0000	.900	.8165	56	1.0039	86	.9759
.610	.9918	.910	.8120	57	1.0029	87	.9750
.620	.9837	.920	.8076	58	1.0019	88	.9741
.630	.9759	.930	.8032	59	1.0010	89	.9732
.640	.9682	.940	.7989	60	1.0000	90	.9723
.650	.9608	.950	.7947	61	0.9990	91	.9715
.660	.9535	.960	.7906	62	.9981	92	.9706
.670	.9463	.970	.7865	63	.9971	93	.9697
.680	.9393	.980	.7825	64	.9962	94	.9688
.690	.9325	.990	.7785	65	.9952	95	.9680
.700	.9258	1.000	.7746	66	.9943	96	.9671
.710	.9193	1.010	.7708	67	.9933	97	.9662
.720	.9129	1.020	.7670	68	.9924	98	.9653
.730	.9066	1.030	.7632	69	.9915	99	.9645
.740	.9005	1.040	.7596	70	.9905	100	.9636
.750	.8944	1.050	.7559	71	.9896	101	.9627
.760	.8885	1.060	.7524	72	.9887	102	.9618
.770	.8827	1.070	.7488	73	.9877	103	.9609
.780	.8771	1.080	.7454	74	.9868	104	.9600
.790	.8715	1.090	.7419	75	.9859	105	.9591
.800	.8660	1.100	.7385	76	.9850	110	.9551
.810	.8607	1.150	.7223	77	.9841	115	.9509
.820	.8554	1.200	.7071	78	.9831	120	.9469
.830	.8502	1.250	.6928	79	.9822	125	.9429
.840	.8452	1.300	.7694	80	.9813	130	.9388
.850	.8402	1.350	.6667	81	.9804	135	.9349

Example: 2½ inches differential on a mercury manometer.
Pipe size: 4-inch
Gas temp.: 85° F.
Gas sp. gr.: 0.720

Solution: From tables:
2½ inches mercury through 1-inch pipe = 215.MCF/24 hrs.
4-inch pipe correction factor = 16.
0.720 sp. gr. correction factor = 0.9129
85° F. temp. correction factor = 0.9768
Therefore:
$215. \times 16. \times 0.9129 \times 0.9768 = 3067.$ MCF/24 hrs.

"H_2O	MCF	"Hg	MCF	Lbs. Ga.	MCF	Multipliers for Other Than 1" Diameter Pipe	
						I.D.	Factor
0.10	12	0.10	44	7	517	1½	2.25
.20	17	.20	62	8	542	2	4.00
.30	21	.30	76	9	570	2½	6.25
.40	24	.40	88	10	596	3	9.00
.50	27	.50	98	11	622	3½	12.25
.60	29	.60	108	12	643	4	16.00
.70	31	.70	116	13	665	4¼	18.00
.80	34	.80	124	14	684	4⅝	21.39
.90	36	.90	132	15	703	5	25.00
1.00	37	1.00	136	20	786	5⅛	26.90
1.50	46	1.50	168	25	855	5⅝	31.64
2.00	53	2.00	192	30	911	6	36.00
3.00	65	2.50	215	35	961	6¼	39.00
4.00	75	3.00	235	40	1007	6⅝	43.90
5.00	84	3.50	253	45	1047	7	49.00
6.00	92	4.00	271	50	1082	7¼	52.50
7.00	99	4.50	288	60	1137	8	64.00
8.00	106	5.00	304	75	1223	9	81.00
9.00	113	5.50	319	90	1304	10	100.00
10.0	119	6.00	334	100	1337	12	144.00
11.0	125	6.50	348	110	1369		
12.0	130	7.00	362	120	1402	Factor = $(\text{Inside dia.})^2$	
		7.50	376				
		8.00	389				
		8.50	401				
		9.00	413				
		9.50	425				
		10.00	436				
		10.50	445				
		11.00	456				
		11.50	466				
		12.00	474				

Drilling Engine Exhaust Steam Utilized for Stack Blower Service

Supplementing the standard stack blower, using live steam and adjusted by the pot fireman or actuated by the automatic fire control apparatus, one drilling company pipes the exhaust steam from the drawworks drive engine back to the boiler battery instead of venting it through a short line over the shale pit.

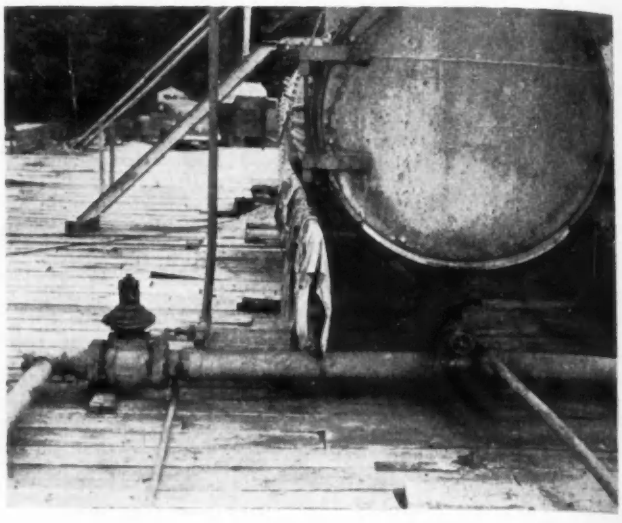
BOILER OPERATION

The exhaust steam line carries a back-pressure regulator, mounted beyond the farthest of the boilers from the rig, and also is equipped with a low-pressure trap to remove condensation. At the point where this steam line passed below the smoke box of each boiler, a riser is welded on, with a valve which permits regulation of the amount of exhaust steam released into each stack.

With this setup, as soon as exhaust steam builds up pressure in the line, it begins to augment the draft in the boilers, timing the increase in fire intensity closely behind the first withdrawal of steam from the battery.

The auxiliary blower system, with the jet pipe extended to within the throat of the stack mounting, cares for the demand on the boilers, and leaves the other blower system idle except when first building up pressure, or in case of heavy steam demands outside the drilling operations.

The system actually uses less pipe than the usual relief line to waste pits.



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See Pages 2450 to 2455, Composite Catalog.

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Angle Bracket Permits Rod Use in Engine Controls

Replacing with rods the usual wire cables and pulleys used to transmit control from the driller's stand to the power units on a gas-engine driven rig enabled one drilling superintendent to improve engine speed regulation and at the same time provide a more sturdy controls system.

ENGINE CONTROLS

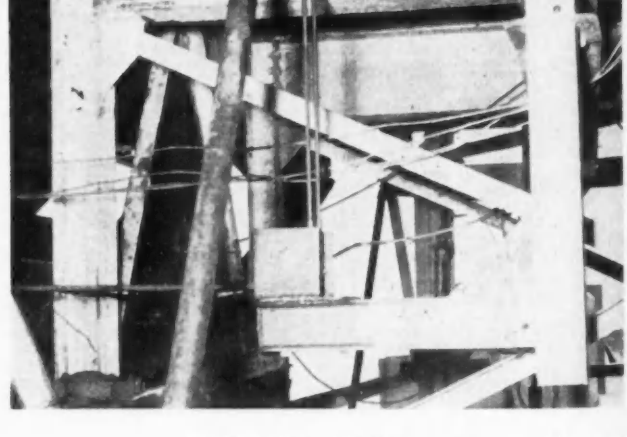
By means of two sets of bell cranks and connecting rods—of ⅜-inch pipe, operating under tension—the motion of the control levers at the drawworks is transferred around the substructure members to the engine throttles. The bell-crank assemblies are placed where the connecting rods will clear all interference, and where the bearings may be readily lubricated.

When so set, the bell-crank units may be fitted with shields which will effectively exclude water and dirt, yet which may be readily removed for inspection or lubrication. Such a safeguard, in addition to extending the life of the control units, also reduces the frequency of maintenance and inspection, and thus relieves the crew of extra work below the floor. Where the vertical rods are exposed to water drip, as under the rotary table, shields fitted to the rods divert the flow before it can reach the lubricated portions of the set-up

The set of cranks below the drawworks normally is located far from any point of support on the rig substructure. To provide rigid mounting for this unit, an L-shaped support is welded to a projecting end of a tie-beam below the floor stringers, the end of the horizontal member being designed to take the bell-crank mounting and align it with the similar unit below the engine throttles.

This arm, supported by the substructure, is rigid enough to withstand derrick vibration, and sturdy enough to eliminate slack in the controls which otherwise would be present were a less rigid mounting used.

The arm is removed intact with the floor tie member when tearing down for a move, and need only be bolted in place again to insure proper alignment and spacing for the control rods.



DRILLING HINTS

Flexible Steam Header Eliminates Long Expansion Loops

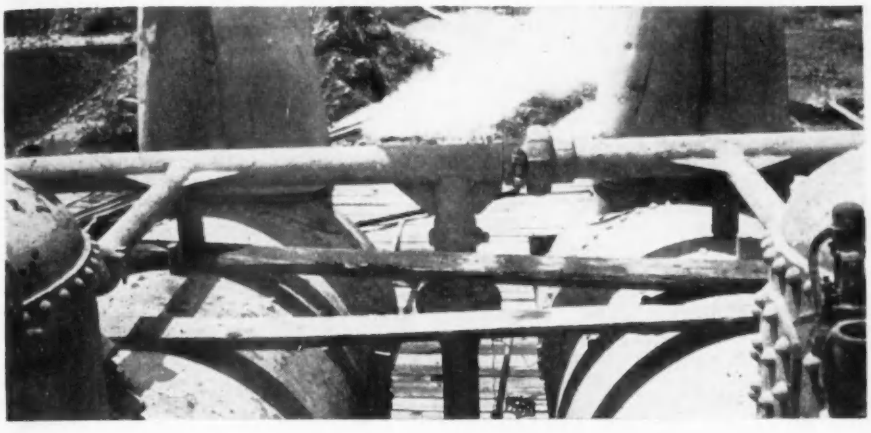
Elimination of serious expansion stresses in the steam header is necessary if the connections are to be protected against torsion, and the line maintained leak-proof against high pressure and temperatures.

STEAM PIPING

One header design, departing from the usual plan of setting a wide sweep bend between steam dome and main, utilizes a short straight tie-in, a flexible or ball-joint type union being installed to connect the nipple welded to the dome and the short run. This run is welded into the main, with triangular gusset plates to insure rigidity of the welded connection. Any variation in length of the main, therefore, coming at right angles to the short run, is absorbed by bending or flexing the short length between the angle braces and the union, protecting the dome connection.

The drop leg, set between the central pair of boilers, is also braced with angle plates, and the two halves of the main are connected at a point close to the drop with a ball-type union; a second such unit being installed in the vertical leg to insure against stresses from the long run on the ground being transmitted back up to the tie-in atop the boilers.

Retained against lateral shifting in any direction by the short connecting runs to the steam domes, the main is not tied down to the boiler shells, being supported, instead, on short legs of pipe welded to the lower side of the main, each of these equipped with round ends to avoid cutting or scoring the boiler plate as the main shifts under expansion.



Sleeve Bearing Absorbs Load of Power Tie-Down

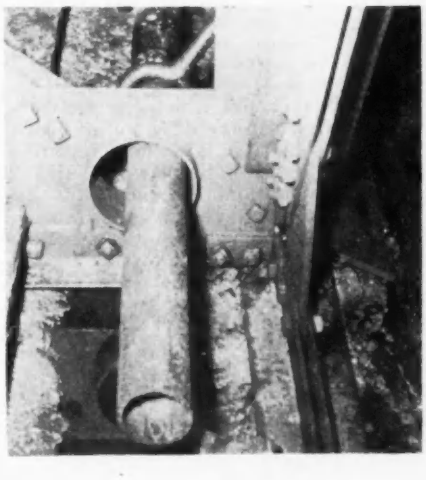
By interposing a gusset plate between the vertical members of the rig substructure and the interior diagonal braces, and welding a short six-inch pipe nipple in the center of this plate, one drilling superintendent provided a method for locating the pipe on which the drilling engine turnbuckle eyes could be placed with a minimum of time for alignment.

ENGINE ANCHORAGE

The pipe nipples or spools are large enough so that a joint of 4½-inch drill pipe is readily slipped through them, being allowed to rest in the curve of the pipe circles until tension on the engine-anchorage turnbuckles pulls it up into line with the strain on the adjusting units.

The pipe bears against a considerable area of the pipe nipple, in marked contrast to the knife-edge support afforded when it is pulled against the angle between two members of the substructure; and the arc of the contact insures automatic alignment of the turnbuckles to afford equal distribution of load across the entire bearing area.

Use of the plate instead of contact at the junction of two angles, in addition to bettering inspection of the support, also reduces unit stress on the rig by distributing the pull of the engine mounting over a number of bolts which hold the plate in place, in contrast with the two usually loaded when angles are connected.



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FREE FROM BURRS

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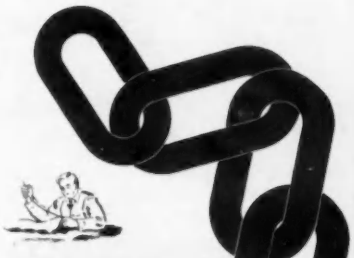

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PAGES 3079 THRU 3098 IN THE COMPOSITE CATALOG

Adjustable Footing Simplifies Mounting of Rail

HANDRAIL MOUNTING

The pipe railing which is used on the outside of the various stair flights around a rig is frequently subjected to blows which put bends in the pipe or kink it sufficiently so that it does not measure exactly as much between supports as it did when first made—or as do the supporting sockets or pins on the much heavier channel which forms the sides of the stairway itself.

One contractor solved the problem of matching up railings and stairways by devising a simple method of attachment with sufficient space for adjustment to accommodate any reasonable change in length of the railing.

Two holes are drilled in the upper flange of the channel, and nuts of the desired size welded under the flange—in a spot where they are protected against accidental damage.

To the base of the post which forms the end of the railing is welded a flat plate, slotted in line with the two holes cut into the channel flange. The post also carries, placed before the slotted plate is welded in place, a retainer or washer plate of ⅜-inch steel with holes drilled through it to match those in the flange of the channel beam. In this manner the post is braced by the retainer plate, and the support thus formed is much stronger than would be the single plate with welded pipe end. The unit is readily adjusted, and quickly dismantled for transportation. The bolts are reinserted in the fixed nuts, and there tightened, after the locking plate and railing support have been removed, and the means for reassembling the unit thus kept at hand on the new site.

Back-Up Tongs Anchor Utilizes Derrick Leg

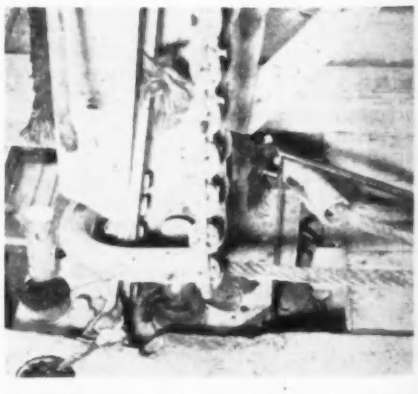
FLOOR UNITS

Securing the post which takes the pull of the back-up tongs is a problem which has nearly as many solutions as there are drilling contractors, but many of the plans involve blocking a portion of the floor which is frequently required for other work, as well as imposing a severe load on that portion of the floor structure to which the post is anchored.

One contractor sets the post on a base with a pivot or pin which permits motion of the post in the direction of greatest stress. The base is then merely toenailed to the floor to prevent shifting under rig vibration. The strain of the tong torque is taken by a section of drilling cable, looped through the eye at the back of the post and carried around the base of the derrick leg. The post is so set that when the tong takes full load the pull is directly aligned with the leg.

The loop of the wire line around the derrick leg is carried in a sleeve of extra heavy pipe, formed to a smooth curve so that no portion of the line is overstressed.

To retain the line in close contact with the angles against which it bears to prevent upward movement of the sleeve, the base of the post is placed so that the stop which prevents excess travel away from the vertical is almost in contact with the supporting member when the tong is disengaged. Motion of the top of the post is usually adjusted so that not more than three inches travel brings full load on the anchoring loop of line.



DRILLING HINTS

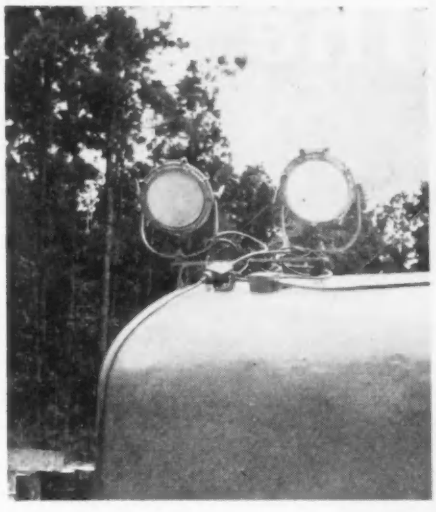
Floodlight Mounting Unitized Atop Pusher's Shack

LOCATION LIGHTING

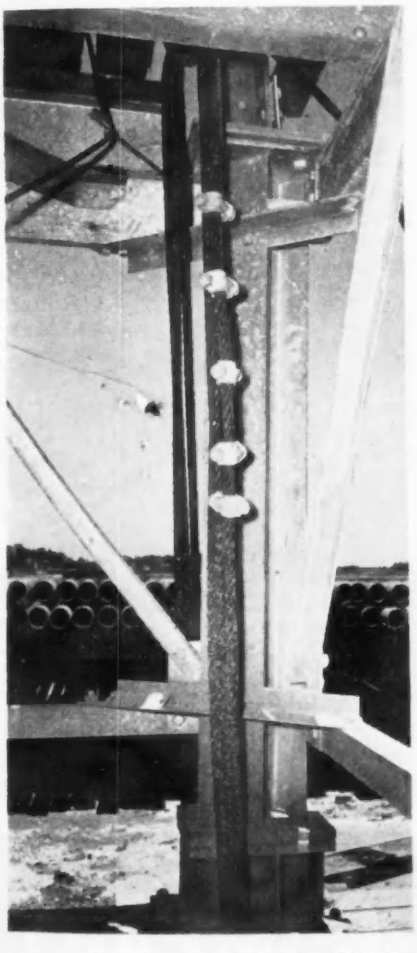
General purpose floodlights for the rig are mounted by one contractor on a short post welded to the end of the tool-pusher's shack. On this post is set a short arm, pivoted at its center, and carrying supports for two floodlight units. The entire unit fits snugly atop the shack, and is transported there between wells.

The two lights may be set parallel, for maximum illumination in any one direction, or they may be faced singly toward divergent points. Being pivoted on their support, the two lights may normally be set to provide illumination for the boilers, water supply pits or pump setting; being swung around to aid in the handling of pipe, mud materials or other supplies when these must be unloaded at the rig during the night.

Adjustment of the lights is easily made from the shelf which is built along one side of the shack, while switches on each lamp housing provide for individual control at the same time that a master switch within the shack permits cutting off both units when not required.



Tie-Down Permits Floor Mounting of Dead-Line Bitt



DEAD-LINE ANCHOR

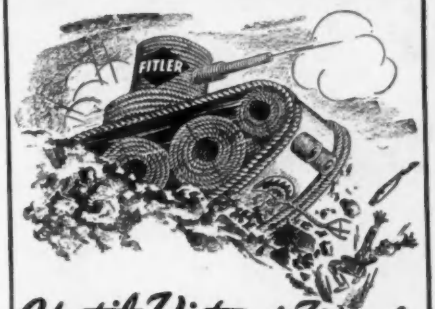
Where a drum-type dead-line anchorage is used, one company moves this unit to the derrick floor, mounting it for position only on the leg of the structure, but transmitting the entire strain of the line through a doubled bight of drilling line to a hitch around the lowest horizontal member of the substructure at the corner of the setting.

Placing the dead-line hitch on the floor brings this unit before the eyes of the crew, and enables slip or creeping to be detected instantly, as well as allowing new line to be run out under better supervision when the live end is cut off.

When setting the anchor unit, it is simply held in line with the derrick leg by loosely set clamp bolts, so that the unit may adjust itself vertically until the entire pull is transmitted through the hold-down line to the base. The clamping members are then tightened, with the bight below the floor prestressed to absord full loading.

The new portion of the line, stored on the shipping drum at ground level, is brought to floor level outside the structure, and is in the open and free of possible chafing or kinking as it is allowed to feed around the drum on the anchor when line changes are made.

The anchoring line must be run through a shoe to protect it from cutting on the sharp edge of the derrick beam. Advantage may be taken of this method of securing to eliminate possibility of overloading one wrap of the line at the expense of the other.



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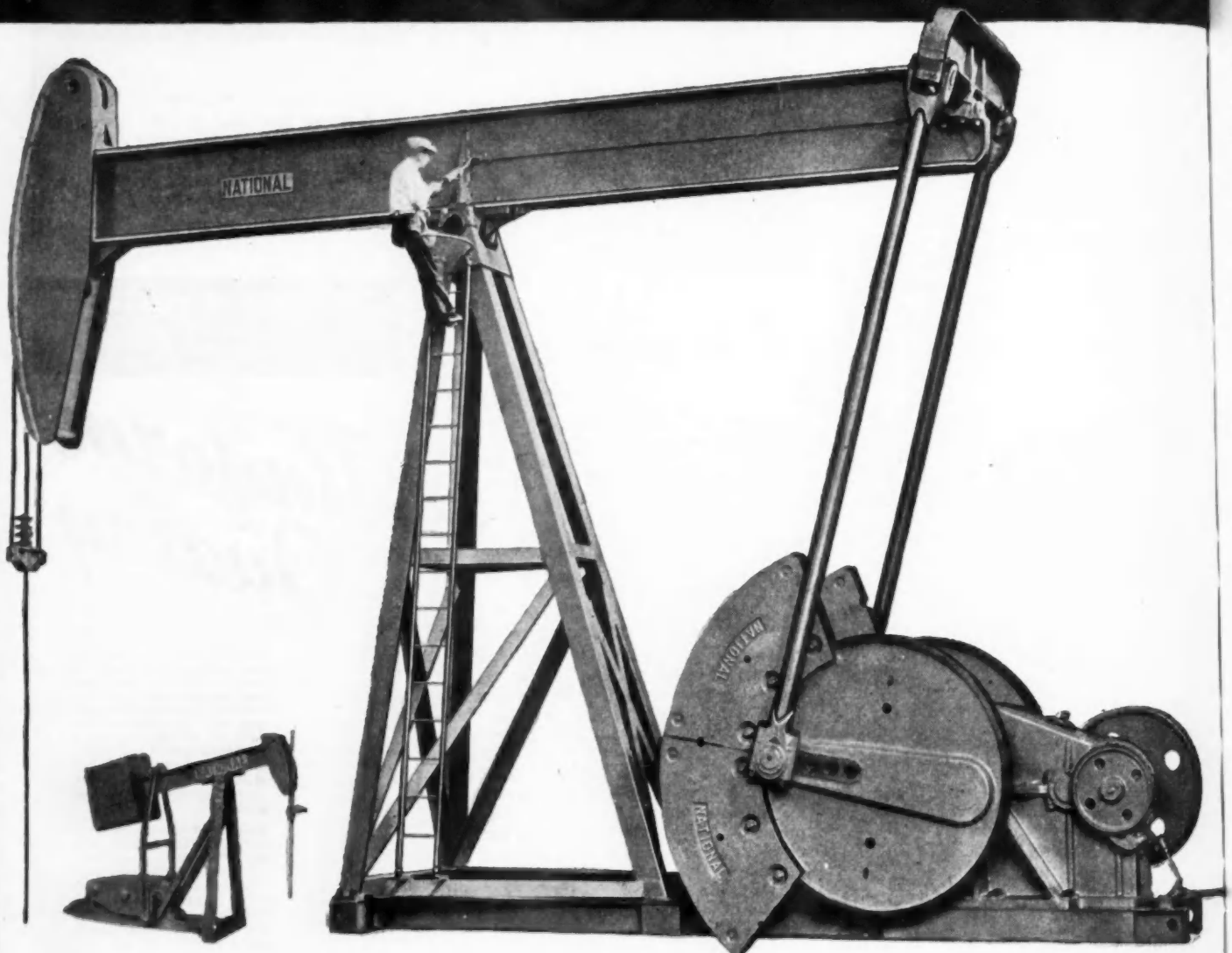


Comparison of the smallest and largest National Unit Pumpers

THE NATIONAL SUPPLY COMPANY

Wildcat Completions Decline In Rate of Increase

EXPLORATORY completions averaged 82.3 wells per week during the first seven months of this year, a gain of 5.4 percent over the corresponding period of 1944. Wells completed in the two periods totaled 2468 and 2422, respectively.

As the year advances the rate of increase in exploratory completions is decreasing and this rate of decline probably will be accelerated since the military demand for crude oil and its products will drop materially. A goal of 5000 exploratory tests was set for the industry by PAW at the beginning of the year, based on the then foreseeable requirements for war activities. Even before there was definite indication that the end of the Pacific war might be in sight, there were positive signs that the 5000-well figure would not be reached, and this can be taken as a practical certainty now. Already PAW has taken steps to reduce crude production, and a further slowing down in wildcatting is but a logical step in the face of developments for the rest of this year, at least.

Percentage Gain

The percentage of difference in the total completion record for the first seven months of this year as compared with last, is only 1.9 percent, representing an increase this year over last. With the year more than half gone and the stimulus of war demand greatly reduced, it is even doubtful whether the total of exploratory completions this year will reach that of 1944.

As soon as the artificial situation created by a strictly controlled price of oil is relieved and the normal law of supply and demand is functioning again, the trend of high dry-hole ratio should be changed. However, the fact remains that more and more drilling is required to maintain reserves, and only the discovery of a major reserve area will affect this situation.

There is little change in the kind of discoveries being made this year as com-

■ CONTINUED ON PAGE 54
(Also see tables on 50, 51, 52)

Summary of Results of Exploratory Drilling

ITEM	July, 1945	June, 1945	JANUARY-JULY 1945	1944	Percent Diff.
Oil Discoveries	38	41	269	252	+ 6.7
New Fields	29	23	186	170	+ 9.4
New Pays	9	18	83	82	+ 1.2
Distillate Discoveries	5	.....	26	24	+ 8.3
New Fields	5	.....	20	17	+ 17.7
New Pays	.....	.....	6	7	— 14.3
Gas Discoveries	9	13	65	64	+ 1.6
New Fields	6	11	54	54	.....
New Pays	3	2	11	10	+ 10.0
Total Discoveries	52	54	360	340	+ 5.9
Extensions to Fields	19	7	104	104	.....
Oil Fields	9	4	79	77	+ 2.6
Distillate Fields	7	2	18	7	+157.1
Gas Fields	3	1	7	20	— 65.0
Total Prod. Tests	71	61	464	444	+ 4.5
Dry Holes	284	329	2,004	1,978	+ 1.3
(Weekly Average)	71.0	82.3	66.8	63.8	+ 4.7
Wildcats	283	322	1,954	1,919	+ 1.8
New Pays	1	3	27	12	+125.0
Outposts	.....	4	23	47	— 51.1
Total Expl'tory Tests	355	390	2,468	2,422	+ 1.9
(Weekly Average)	88.8	97.5	82.3	78.1	+ 5.4
Percent Productive (Weekly Average)	20.0	15.6	18.8	18.3	
Percent Dry (Weekly Average)	80.0	84.4	81.2	81.7	

Dry hole completions are from weekly reports and totals represent completions for 4 weeks in July, 1945; 4 weeks in June, 1945; 30 weeks in Jan.-July, 1945, and 31 weeks in Jan.-July, 1944.

Results of Exploratory Drilling in July and First 7 Months, 1945-1944, By District

State or District	JULY, 1945													FIRST SEVEN MONTHS, 1945																	
	Productive Tests									Total Productive	Unproductive Tests			Total Exploratory Tests	Productive Tests									Unproductive Tests				Total Exploratory Tests	
	New Fields			New Pays			Extensions								New Fields			New Pays			Extensions			Total Productive				Total Dry			
	Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.		Wildcats	New Pays	Outposts		Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.	7 Mo. 1945	7 Mo. 1944	Wildcats	New Pays	Outposts	7 Mo. 1945	7 Mo. 1944	7 Mo. 1945	7 Mo. 1944
Alabama											3			3		1								1	1	11			11	7	12	8
Arizona																													6		6
Arkansas											3			3											7	26	1	1	28	40	28	47
California	1			2			1	1		5	21			26	4			3			3	1		11	24	165		2	167	175	178	199
Colorado																					1			1	2	2			2	4	3	6
Florida																										9			9	1	9	1
Georgia											2			2												6			6	2	6	2
Illinois	2			2			5			9	47			56	12			18			20	5		55	46	209			209	201	264	247
Indiana	1						1			2	11			13	2	1		2			2			7	8	59			59	26	66	34
Iowa																										1			1	2	1	2
Kansas	4	1		1						6	28			34	27	6		4			10	4		51	39	189			189	251	240	290
Kentucky											3			3	6			1			2			9	18	42			42	69	51	87
Louisiana	2			1					1	4	12			16	15	4		12		4	3	1	2	41	25	83		1	84	78	125	103
North	1			1						2	9			11	5	4		1			2	1		13	6	50			50	46	63	52
South	1								1	2	3			5	10			11		4	1		2	28	19	33		1	34	32	62	51
Michigan											11			11	6	2		3	1		1			13	7	121	1	3	125	129	138	136
Mississippi							2			2	10			12		1	2				3			6	1	71			71	55	77	56
Missouri											2			2					1		1			1		11			11	1	12	1
Montana											2			2	2						2			4	2	6			6	13	10	15
Nebraska											1			1												3			3	2	3	2
New Mexico											4			4	2	1		2	1		1			7	6	36	1		37	29	44	35
Ohio		2						1		3	3			6		11			1		1	4		17	25	36			36	43	53	68
Oklahoma	6	1					1			8	23			31	34	7	1	7	4		12	1		66	38	175			175	117	241	155
Tennessee																										1			1	4	1	4
Texas	13	2	5	3	3		4		2	32	94	1		127	73	20	17	31	4	2	16	1	5	169	184	682	24	13	719	717	888	901
E. Texas Border			2							2	2			4			2							2	5	10			10	5	12	10
Rest of E. Texas		1		1						2	6			8	2	2			1	1				6	9	39	2	2	43	76	49	85
North Texas	3			1			2			6	24			30	15	1		8	1		3			28	37	171	4	1	176	172	204	209
West Central	4									4	12			16	11	4		2						17	14	73	4		77	60	94	74
West Texas	3									5	12	1		18	16			8			9			33	26	121	9	5	135	105	168	131
Panhandle											1			1												5	1		6	6	6	6
Upper Coast	1		1	1					1	4	11			15	7	4	7	10		1	4		3	36	24	72	4	3	79	73	115	97
Lower Coast	1	1	2		2				1	7	12			19	14	7	7	1	2			1	2	34	44	102			102	101	136	145
Southwest	1			1						2	9			11	6	2	1	2						11	23	64		1	65	90	76	113
South Central											5			5	2									2	2	25		1	26	29	28	31
Utah																														1	1
West Virginia																															
Wyoming											3			3	3						2			5	11	10		3	13	5	18	16
Total U. S.	29	6	5	9	3		14	2	3	71	283	1		355	186	54	20	83	11	6	79	18	7	464	444	1954	27	23	2004	1978	2468	2422

New Oil and Gas Fields and New Pay Horizons Discovered in the United States in July, 1945

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension (Opinion of Relative Importance of Area from General Viewpoint of the Industry Based on Pertinent but Necessarily Incomplete Data. Later Development or More Complete Data Obviously Might Require Revision of this Tentative Opinion).
		CALIFORNIA—New Oil Field									
Kern	McDonald Anticline Fld	Williams Bros. Co.'s Layman 1, 12-28s-19e, 1 mi sw Antelope Hills fld	6-13-45	7-23-45	853	807- 850	Temblor sd; L. Mio	P 150	21	Ant; geol	Disc. of minor importance. Area sml and little activity anticipated.
		CALIFORNIA—New Oil Pays									
Kern	Cymric	Union Oil Co.'s 45-26, 26-29s-21e, 4 mi n McKittrick fld	6-21-45	7-13-45	3610	3580-	Carneros sd; Mid. Mio	F 1440, 24% wtr, 0.809 mln; 1/2"	33	M; geol	Sd thin; only 200 acs prod in overlying Pliocene. There is some question whether prod formation is Carneros or button sds just above; Union believes latter. Possible ultimate prod 1,000,000 bbls.
Kern	Edison	H. H. Magee's Dougherty 3, 14-30s-29e, Edison fld (OWDD)		7-16-45	2624	2570-2624	Fractured Schist	F 1000, 1% wtr, 1 mln; 1/4"	19.2	M; geol	Will stimulate fract Schist development altho prod likely to be spotty and erratic. However, failures in Schist can plug back and comp in upper pools.
		CALIFORNIA—Gas Field Extension									
Madera	Gill Ranch	Shell's Edison-Securities 25-20, 20-13s-16e	6-11-45	7- 5-45	4517	4434-4480	Eocene	F 2.9 mln; 11/32"	....	Ant; seis	Extends known prod limits of fld abt 1/2 mi. Well is edge and will probably be last drilled in sw area of fld.
		CALIFORNIA—Oil Field Extension									
Los Angeles	Seal Beach	Shell's Bryant 3-1, 34-4s-12w, nw end of Seal Beach fld		7-23-45	10194	8600-10120	Upper Puente; Mio	F 262, 3.1% wtr, 0.135 mln; 3/8"	31.6	D; geol	Extends Bryant pool 1/2 mi nw. Proves up several additional locations.
		ILLINOIS—New Oil Fields									
Hamilton	S. Aden	Rudy's Marlow 1, nw nw se 29-3s-7e	6-20-45	7-24-45	3430	3384-3430	McClosky li; Miss	P 25, 9 wtr	....		1 1/2 mi s of Aden Consol. pool.
White	W. Maunie	B. M. Heath's North Storms 1, ne nw sw, 2-6s-10e	7-13-44	7-17-45	3149	3038-3149	McClosky li; Miss	P 38, 4 wtr	....		Orig comp 8-1-44 as dry hole at 3149 ft. Abt 2 mi sw N. Maunie pool and nw S. Maunie pool.
		ILLINOIS—New Oil Pays									
Richland	Parkersburg Consol.	Bridge's Hill 1, ne sw se 20-2n-14w	6-24-45	7-24-45	3117	3101-3117	Rosiclare li; Miss	P 200, 200 wtr	....		Dual comp in McClosky and Rosiclare li, in area of McClosky production.
White	Brownsville	Skelly's L. Kisner 2, se sw se 31-5s-9e	5-21-45	7- 3-45	3050	3020-3050	Aux Vases sd; Miss	P 105, 50 wtr	....		Has carried shows of oil in wells comp in pool in other sds.
		ILLINOIS—Oil Field Extensions									
Coles	Mattoon	Gordon's Brining 1, ne nw ne 3-11n-7e	6-14-45	7-10-45	2038	1942-1967	Aux Vases sd; Miss	P 108	....		3/4 mi sw of old Mattoon prod fr McClosky; 2 mi sw of area of recent development. Is being offset.
Edwards	S. Ellery	Phillips' Tait 1, sw se sw 5-3s-10e	5-27-45	7-17-45	3268	3247-3268	McClosky li; Miss	P 24, 23 wtr	....		1 1/2 mi sw S. Ellery pool, which consisted of 2 producing wells in McClosky, 1 of which is abnd.
Effingham	Bible Grove	Waggoner's Richars 1, se sw sw 29-6n-7e	6-23-45	7- 3-45	2798	2792-2798	Rosiclare li; Miss	P 15	....		3/4 mi fr nearest prod with intervening dry holes.
Gallatin	Herald	F. King's H. Jones 1, ne ne ne 22-7s-9e	6-29-45	7-31-45	2913	2901-2913	Aux Vases sd; Miss	P 200, 40 wtr	....		1 1/4 mi s Herald pool. Prod very spotty, with sev. intervening dry holes.
Wayne	Clay City Consol.	Robinson Puckett's Molt "B" 1, sw se ne, 32-1n-8e	5-15-45	7-17-45	3204	3017-3027	Aux Vases sd; Miss	P 18	....		2 mi w main Clay City Consol. pool with only 1 prod well between.
		INDIANA—New Oil Field									
Posey	Jeffries	Carter Oil Co.'s Cox 1, nw nw se 14-7s-14w		7- -45	2092	2073-2076 2085-2092	Tar Springs sd; Miss	P 92	....		
		INDIANA—Oil Field Extension									
Knox	St. Francisville	Sinclair-Wyoming's Brevoort 1, se se se 3-2n-11w		7- -45	1232	1229-1232	Pennsylvanian sd; Miss	P 200	....		
		KANSAS—New Oil Fields									
Barber	Unnamed	J. M. Huber Corp.'s Roark 1, ne sw ne 9-31s-14w, 2 mi e N. W. Skinner pool		7-25-45	4365	4363-4365	Maquoketa li; Penn	F 96, 7 mln	....	Ant; seis, sub	Fairly imprtnt; well running high on Maquoketa.
Barton	Unnamed	Harbar Drilling Co.'s Unruh 1, ne ne nw 24-20s-15w, 6 mi sw Ryan pool		7-25-45	3690	3643-3646	Arbuckle li; Camb	F 200, 0.25 mln	....	Str trp; sub, dr	Good disc; Arbuckle well staturated, porous; may cover a section.
Rooks	Unnamed	Darby-Bothwell, Inc.'s Vohs 1, ne ne ne 14-10s-19w, 3 1/2 mi n Zurich pool		7-15-45	3563	3549-3563	Arbuckle li; Camb	P 380	38	Str trp; dr	Arbuckle shows high porosity; prod area may be sml but recovery expected to be high.
Sheridan	Unnamed	Continental Oil Co.'s Hoxie State Bank 1, ne ne ne 32-8s-26w, 2 mi sw Studley pool.		7-24-45	4253	3662-3773	Lansing li; Penn	Sw 240	....	Ant; seis, sub	Important disc; looks like fairly lge structure.
		KANSAS—New Gas Field									
Barber	Unnamed	Drillers Gas Co.'s Skinner 1, nw ne 16-13s-14w, 1 1/2 mi e NW Skinner pool		7-17-45	4344	4337-4344	Maquoketa li; Penn	F 20 mln	....	Ant; seis, sub	Structure likely to cover fairly lge area.
		KANSAS—New Oil Pay									
Barton	Hiss	Mercury Drilling Co.'s Weathers 2, ne se ne 35-20s-14w, on w flk Hiss pool		7-15-45	3549	3544-3549	Arbuckle li; Camb	P 125	....	Str trp; dr	First Arbuckle li prod in Hiss pool.
		NORTH LOUISIANA—New Oil Field									
Richland	Big Creek	Southport Pet. Co.'s Lola S. Howard 1, c nw nw nw 4-16n-8e	6-18-45	7-17-45	3433	2965-2980	Tuscaloosa sd; Cre	F 260; 1/4"	40.1	Seis	Important strike. Comparable to Delhi.
		NORTH LOUISIANA—New Oil Pay									
LaSalle	Olla	Placid Oil Co.'s Tremont Lbr. Co. 3, c ne ne 9-9n-2e	3-13-45	5-24-45	7130	2768-2775	Wilcox sd; Eoc	F 125; 1/4	....		
		SOUTH LOUISIANA—New Oil Field									
Beauregard	Fleetwood	Louisiana Land & Expl. Co.'s J. A. Bentley Jr. Tr. 2-2-A, c ne1/4 nw1/4 36-5n-5w	1- 2-45	6-28-45	7285	6488-6494	L. Wilcox sd; Eoc	P 48, some	48		Water broke in on several comp tests indicating

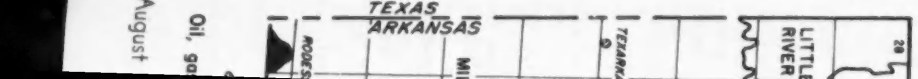
		SOUTH LOUISIANA—New Oil Field										
Rapides	Flatwoods	Louisiana Land & Expl. Co.'s J. A. Bentley Jr. Tr. 2-2-A, c ne¼ nw¼ 36-5n-5w	1- 2-45	6-28-45	7285	6488-6494	L. Wilcox sd; Eoc	P 48, some wtr	48		Water broke in on several comp tests indicating oil-water contact near top of sd. 2nd test abnd.
		SOUTH LOUISIANA—New Distillate Pay										
Terrebonne	Lake Barre	Texas Co.'s State-Lake Barre 44, 19-21s-20e	1-16-45	7- 5-45	13259	11772-11790	Miocene sd; Mio	F 41; 1/8"	54	D; refl, seis	Other sds at 3465 and 10,457 prod oil.
		MISSISSIPPI—Oil Field Extensions										
Adams	Cranfield	The California Co.'s Ella G. Lees 3, 29-7n-1w, 1¼ mi ne Cranfield fld	3- 7-45	5- 4-45	10358	10248-10358	Massive sd; U. Cre	F 290; 3/64"	39	SD; seis	Extends prod 1¼ mi ne.
Wayne	Eucutta	Gulf's W. F. Davis 1, 660 ft s & e nwc sw 2-9n-9w, 1 mi w and 1 mi s of prod in Eucutta.	4-14-45	5-15-45	5273	5163-5173	Stanley sd; U. Cre	F 236; 11/64"	32.7	SD; seis	Extends Eucutta fld 1 mi s and 1 mi w. Much higher grav oil prod than found in fld so far, indicating new prod zone.
		OHIO—New Gas Fields										
Ashland		Ditch-Gerig's E. E. Drake 1, lot 33, Sullivan twp		6-26-45	2648	2633-2644	Clinton sd; Sil	F 2.716 mln			Opens new gas pool in ne part of twp. Bulk of gas found in 2nd Clinton; sml pays in Newburg and 1st Clinton.
Muskingum		South Penn Oil's H. M. Vernon 1, Adams twp, sec 19		7-18-45	4344	4180-4226	Clinton sd; Sil	F 0.283 mln			
		OHIO—Gas Field Extension										
Stark		Belden's Stark County Infirmary 1, sec 33, plain twp		7-10-45	4634	4576-4634	Clinton sd; Sil	F 2.4 mln			Extends old Stark fld 1½ mi s; indicates joining of Stark fld with Sandyville fld.
		OKLAHOMA—New Oil Fields										
Logan	Unnamed	Texas Co.'s Arundel 1, se ne sw 2-15n-1w, 4 mi se of Meridian		7-22-45	5922	5238-5270	Bartlesville sd; Penn	Sw 250		Ant; seis, sub	May cover 160 acs; well was dry in Wilcox.
Osage	Unnamed	Ashland Oil & Ref. Co.'s Osage 1, cne se 30-21n-11e, 1 mi se Prue fld		7-20-45	2448	2446-2448	Hominy sd; Ord	Sw 250	38	Ant; seis, sub	Sd appears well saturated; porous; extent of pay undetermined.
Pawnee	Unnamed	Deep Rock Oil Corp.'s Donohoe 1, nw nw nw 27-23n-3e, 2 mi n of old Watchorn pool.		7-12-45	3601	3580-3601	Bartlesville sd; Penn	P 41, 56 wtr	37	Ant; seis	May cover a section.
Pawnee	Unnamed	Sunray Oil Corp.'s Gilbert 1, nw sw ne 30-23n-3e, 2 mi nw Watchorn		7-24-45	2732	2726-2732		Sw 60		Flt ant; seis, sub	Undetermined.
Seminole	Unnamed	Ashland Oil & Ref. Co.'s Wallace 1, se ne 16-10n-7e, abt 1 mi n of E. Haney pool.		7-15-45	3665	3658-3665	Gilcrease sd; Penn	F 125	38	Ant; sub	Fairly good strike; may cover half a section.
Seminole	Unnamed	F. C. Hall's Payne 1, ne ne nw 20-6n-7e, abt 5 mi nw of Sasakwa		7-10-45	4354	1900-1920	Senora sd; Penn	F 200	39	Ant; dr	Sand porosity good; looks like sml, prolific pool.
		OKLAHOMA—New Gas Field										
Okfuskee	Unnamed	Phillips Pet. Co.'s Overall 2, sw se nw 15-11n-9e, 1½ mi se Okemah		7-25-45	3375	3360-3370	Cromwell sd; Penn	F 15 mln		Ant; seis, sub	Area of production probably small.
		OKLAHOMA—Oil Field Extension										
Seminole	Konawa	Ashland Oil & Ref. Co.'s Norvell 1, sw ne sw 9-6n-7e, ¾ mi n Konawa pool		7- 5-45	3682	3664-3682	Booch sd; Penn	F 200	36	Ant; sub	Extends Konawa pool ¾ mi n; proves up abt 400 acs.
		LOWER TEXAS GULF COAST—New Oil Field										
Live Oak	Albert West	Continental's Albert West 2-A, 330 fr ne&sel sect 55 Kittie blk, G. W. West sbdn, M. Cronican sur 5474-ac lse.	4- 3-45	7- 6-45	7387	6720-6726	Wilcox sd; Eoc	F 103.26, 4% wtr; 3/4"	34	Ant; seis	Weak discovery. Prod water.
		LOWER TEXAS GULF COAST—New Gas Field										
Goliad	Boyce	Magnolia's W. W. Boyce 1, 660 fr ne&nwl 770.58-ac lse CCSD&RGNG sur	3-10-45	5-31-45	8500	7470-7500	Wilcox sd; Eoc	F 110 mln open		Flt; geol	2nd well in fld comp as oil producer.
		LOWER TEXAS GULF COAST—New Distillate Fields										
Dewitt	Yoakum	Pure's Eugene Rice 1, 466 fr s&el 145.1 ac lse, Jas. May sur	12-31-44	6-26-45	9185	8160-8190	Wilcox sd; Eoc	F 26, 84 mln open; 1/8"	52.2	Seis	2nd well started. Additional sds were uncovered in disc well.
Karnes	Unnamed	Magnolia's D. O. Klingeman 1, 467 fr nly nw&swl 672-ac lse, J. Bradberry sur.	4-15-45	6-23-45	8000	7880-7916	Wilcox sd; Eoc	F 414, 7.7 wtr, 4.925 mln; 3/8"	52.9	Flt; refl	Important strike. Lge output for Karnes County.
		LOWER TEXAS GULF COAST—New Gas Pays										
San Patricio	Maedgen	Republic Nat. Gas Co.'s G. A. Person 1, 330 fr ne&swl 80-ac lse, J. J. Summers 1800 s of Bridwell's Willmann 1.	6- 5-45	7- 6-45	5225	5174-5184	Frio sd; Olig	F 10 mln. open		Ant; seis	Shut in gas well. May link with Willmann pool.
Victoria	Gaffney	Arkansas Fuel Oil Co.'s Etta Terrell 2-A, 467 fr el 2120 fr nl at ra 783.97-ac lse, M. Menchaca Gr.	5- 6-45	7- 6-45	5653	5312-5325	Vicksburg sd; Olig	F 11 mln open		Ant; seis	Dry gas. Adds little to fld.
		LOWER TEXAS GULF COAST—New Distillate Pay										
Refugio	La Rosa	Stanolind's J. W. Spaulding 9, 564 fr wl 1228 fr sl 160-ac lse in nw¼ sect 3, nw of well 6, Johnson & Pugh sbdn Bonnie View Rch.	12-31-44	7- 1-45	9172	6775-6785	Frio sd; Olig	F 189, 22.3 mln open; 4/16"	62	Flt; seis	Deep sand. May extend beyond present limits of fld.
		UPPER TEXAS GULF COAST—New Oil Field										
Harris	Hockley	Magnolia's Warren Ranch 2, 3055 fr nl 1086 fr wl J. Hudson sur, 7300-ac lse, 1000 swly fr Warren 1, abnd 7744 ft in salt.	3-20-45	6-29-45	6366	6356-6366	Yegua-Cap li	F 204; 3/4"	32.4	D; geol	Apparently identifies 2nd cap. Cockfield sd found above present prod zone which showed 2400 ft oil on DST.
		UPPER TEXAS GULF COAST—New Distillate Field										
Colorado	Altair	Superior of Calif.'s Mrs. Matilda Tait 2-A, 330 fr se&swl 500-ac lse, 1600 fr nwl 1000 fr swl Patrick O'Dangherty sur, 1250 s se of A-1 dry hole.	5- 5-45	7- 7-45	9286	8256-8316	Wilcox sd; Eoc	F 432; 1/4"	57.1	Seis	One of largest dist prod comp on Wilcox trend. Indicates lge reserve.
		UPPER GULF COAST—New Oil Pay										
Hardin	Silsbee	American Republics-Houston Oil of Tex.'s Brooks Fee 33, 3223.15 fr wl 200 fr sl G. W. Brooks Lge, 1867.44 w of No. 10 well, 7740-ac lse.	5- 3-45	6-20-45	8155	7500-7520	Yegua sd; Eoc	F 162, 0.2% wtr; 2/2"	41.2	Ant; seis	4th sd found below disc pay at abt 6950 ft.
		UPPER TEXAS GULF COAST—Distillate Field Extension										
Colorado	Chesterville	Stanolind's E. A. Weese 1, 1320 fr nel 1320 fr sel 400-ac lse, GH&H sur	2-21-45	6-20-45	9680	6055-6070	Yegua sd; Olig	F 26, 19 mln open; 3/32"	51.5	Flt; refl	Extends prod ¾ mi s se Magnolia's Anderson 1.
		EAST TEXAS BORDER COUNTIES—New Distillate Fields										
Harrison		Ark-La Gas Co.'s F. A. Baker 1, 660 n&w sec L.G.A. Steele sur	2- 1-45	6-15-45	6783	6215-6292	Travis Peak sd; Cre	F 92.7, 116.3 wtr, 9.656 mln	55	Seis	
Harrison	Harleton	D. E. & R. J. Whelan's Wm. Peal Est. 1, 2350 fr wl 990 fr sl Betty Humphries sur, 330 fr m/ely wel 990 fr sl 126.5 ac tr.	2-28-45	6-27-45	7862	6760-6794	Rodessa "Dees" sd; Cre	F 10 mln, 52 mln; open	58.9		Indicates lge gas structure; had slight gas shows Travis Peak topped at 7306 ft.

New Oil and Gas Fields and New Pay Horizons Discovered in the United States in July, 1945

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension (Opinion of Relative Importance of Area from General Viewpoint of the Industry Based on Pertinent but Necessarily Incomplete Data. Later Development or More Complete Data Obviously Might Require Revision of this Tentative Opinion).
Rusk		**EAST TEXAS—New Gas Field** H. C. Owens' J. H. Rousseau 1, 330 ft out nec 63-ac lse, or 330 ft snl & 1510 ft ewl Robt. Gilkerson sur.	7-14-44	2- 7-45	7512	7382-7389	Travis Peak sd; L. Cre	F3.1mlnopen, 25 dist per mln	....	Ant; geol	Not important; pay zone subnormal in thickness
Freestone	Fairfield	**EAST TEXAS—New Gas Pay** Texas Co.'s Dr. W. N. Sneed 1, 1400 ft snl and 660 ft wel of 320-ac tr and Ben Green sur, 4200 ft s by w Travis Peak gas-distillate disc at 8232-97 ft.	3-15-45	7- 3-45	8292	4198-4207	Woodbine sd; Cre	F 27 mln, 2 dist per mln	....	Flt; geol	Failed to make commercial gasser in fld's disc pay, necessitating plugback to Woodbine. Not important.
Archer		**NORTH TEXAS—New Oil Fields** P. C. Burns' G. F. Parsons 1, 850 ft nsl and 1350 ft ewl sect 1, E. L. & R. R. Co. sur A-688, 1 mi n by e shallow pool, with intermediate failures.	5-19-45	7- 6-45	1495	1488-1495	Cisco sd; Penn	P 10	....	Ant; geol	Not important.
Cooke		Douglas Helms' Lee Blocker 1, 1470 ft fr nw and 3200 ft fr ne lines J. Rodriquez sur A-880, 1¾ mi se Myra, 2⅝ mi e prod same zone.	5- 2-45	7- 4-45	1602	1589-1593	Strawn sd; Penn	P 10, 70% wtr	....	Ant; geol	Not important.
Jack		Continental's S. F. Borden 1, 990 ft out nwc E. S. Wilson sur A-1729, 4¼ mi se Newport; 6 mi se prod.	5-23-45	7-25-45	6927	6722-6860	Simpson li; Ord	F 618, 0.96 mln; 1"	42	Ant; geop	Unusually thick set Simpson pay; 67 ft higher structurally than Ellenburger failure 1½ mi se First Simpson lime prod for county.
Young		**NORTH TEXAS—New Oil Pay** Grace-Grace's (was Burk Royalty Co.'s) E. C. Stovall 2, 330 ft ewl & 1320 ft snl sect 495, TE&L Co. sur, offset to Marble Falls 4300-ft disc.	3-28-45	7- 1-45	4680	4655-4680	Mississippian li; Miss	P 10, 50 wtr	....	Ant; geol	Not commercial.
Cooke	Sivells Bend	**NORTH TEXAS—Oil Field Extensions** Sun Oil Co.'s M. G. Field 1, 467 ft out m/e/ne cor 253-ac tr, M. J. Eason sur A-346, 1¼ mi s by w of 6800-ft prod, nearest.	3-24-45	7-14-45	7024	6670-6680	Strawn sd; Penn	F 244/¾"	40.3	Ant; geol	Occupies highest structural position and most productive for 2-pay area. Intermediate acreage will be developed promptly as pipe line outlet pending.
Montague		Continental-W. B. Omohundro's E. S. Johnson 1, 2450 ft ewl & 2750 ft snl sect 6, Limestone CSL sur, 1¼ mi n by e Stoneburg 6-well pool; 2 mi nw Hildreth fld.	5-16-45	7- 9-45	6145	5996-6018	Bend li; Penn	F 1856, 1.214 mln; 44/64"	42	Ant; geop	Prolific extension; emphasizes possibility Hildreth and Stoneburg flds being united, altho 6 marginal wells comp lower in sect. No failures between flds, or extension well.
Starr	Unnamed	**SOUTHWEST TEXAS—New Oil Field** W. D. Kennard's D. R. Semmes 1, 330 fr w&nl 145-ac lse porc. 88, 5400 s se Kennard's Kelsey 1, Ross fld.	6- 7-45	6-21-45	2435	2399-2421	Frio sd; Olig	F 71.76; ¼"	26	Sub, geol	May be extension of Ross fld.
Webb	Bruni	**SOUTHWEST TEXAS—New Oil Pay** Tom Graham-Lucey Pet. Co.'s Cole Pet. Co. 1, 330 fr nwl 330 fr swl 490-ac lse, M. Arispe Gr, Bruni twnste lot 1, blk 5.	5-22-45	6-22-45	3515	2800-2812	Cockfield-Yegua sd; Eoc	F 102; 4/32"	37.8	Ant; sub, geol	New drill program for Bruni townsite.
Coleman		**WEST CENTRAL TEXAS—New Oil Fields** Hunter-Hunter's T. J. Hudson 1, 330 ft out sec w½ D. F. Roddan sur No. 42, 2⅛ mi nw Cokerfld & same ne Novice fld.	11-30-44	7- 5-45	3712	3609-3630	Strawn (Gray) sd;	P 64, 48 wtr	46	Ant; geol	Importance undetermined.
Jones	Cooper	S. B. Roberts' O. J. Cooper 1, 480 ft out sec sw T&P Ry. 29, blk 15, 1¾ mi nw Lewis-Steffens 1900-ft pool, nearest.	5-24-45	7-11-45	2332	2312-2332	Swastika li; Penn	F 451; 1"	40	Ant; geol	Twin to 4925-ft Bend failure that passed up Swastika pay. Considered substantial pool.
Jones		R. H. Roark-L. F. Hooker's M. H. Mvatt 2, 2260 ft snl & 1780 ft wel Jas. H. Warfield sur No. 10, 4000 ft nw Alexander 1600-ft Bluff Creek fld, nearest.	5-31-45	7-13-45	1424	1410-1424	Fry sd; Penn	P 40	36	Ant; geol	Probably small prod area.
Stephens		Sinclair Prairie Oil Co.'s C. E. Tipton 1, 330 ft out nec sect 2960, TE&L Co. sur.	4- -45	7-19-45	4164	4056-4164	Ellenburger dolo; Ord	F 25, 1½ wtr; 2"	40	Ant; geol	High gas-oil ratio well; produces fluid accumulation in 2 hrs. Sml portion Ellenburger sect is effective pay.
Cochran		**WEST TEXAS—New Oil Fields** Stanolind's J. F. Edwards 1, 660 ft ewl & 1980 ft snl of PSL 13, blk L, 10½ mi w Hudson pool nearest.	3-20-45	7-11-45	5111	5040-5080	San Andres li; Perm	F 386, 9 wtr; 2"	32.2	Ant; geol	Considered expansive prod area based on structural position and oil shows in outlying failures. Portion lower pay excluded for effective water shutoff.
Irion		Shell's Tankersley 2, c sw sw GC&SF Ry sect 10, 5⅔ mi se Mertzon shallow pool, nearest.	2-21-45	7-13-45	8408	7195-7200	Strawn li; Penn	F 96, 6 wtr; 1/8"	45.4	Ant; geol, geop	Area not attractive due to thin pay and sml flow.
Upton		Humble's J. M. Parrott 1, c se se sect 3, E. L. & R. R. sur, 14 mi nw Big Lake fld, nearest prod.	7-12-44	7- 7-45	10744	9100-9893	Basal Permian li; Perm	P 5, 1⅛ wtr	42.3	Ant; geop	Well blew out while dr at 9576 ft, headed rate 200 bbls oil with 500,000 ft gas daily. Entered dry Pennsylvanian 10,011 ft, or 391 ft low to 10,384-ft Devonian failure 3½ mi s by e. Flowed 252 bbls oil natural in 18½ hrs; quit after 1st stage perfs at 9100-9893 ft. Multi-acid treatment and additional perfs failed to revive flow.
Ector	TXL-Ellenburger	**WEST TEXAS—Oil Field Extensions** Phillips Pet. Co.'s T. P. Land Trust-Phillips 1-A, c nw nw T&P Ry 21, blk 45, T-1-S, 2¼ mi se Ellenburger disc.	12- 3-44	6-29-45	9853	9680-9795	Ellenburger dolo; Ord	F 1650; ½"	43.6	Ant; geol	Currently marks apex of structure; estab Ellenburger as major source of sweet crude; barren in 7900-ft Devonian.
Garza	Hitt	Honolulu Oil Corp-Devonian Oil Co.'s H. F. Richardson 1, 440 ft out swc BS&F Ry sect 1282, 1½ mi se owners' Hitt pool disc.	3-22-45	6-29-45	3525	3511-3525	San Andres li; Perm	P 83, 6 wtr	37.2	Ant; geol	Possibly separate sml pool, making, 3 area, all officially called P.H.D. fld.

[1] Character of producing formations abbreviated thus: ch, chalk; dolo, dolomite; li, limestone; sd, sandstone; sh, shale; ser, serpentine; cgl, congolmerate. Ages of formations abbreviated thus: Pleis, Pleiocene; Plio, Pliocene; Mio, Miocene; Olig, Oligocene; Eoc, Eocene; U. Cre, Upper Cretaceous; L. Cre, Lower Cretaceous; Jur, Jurassic; Tri, Triassic; Perm, Permian; Penn, Pennsylvanian; U. Miss, Upper Mississippian; L. Miss, Lower Mississippian; Devo, Devonian; Sil, Silurian; Ord, Ordovician; Cam, Cambrian.
[2] Barrels of oil per day (24 hr. rate), flowing (F), pumping (P), swabbing (Sw), or bailing (B); or million cubic feet of gas daily open flow capacity; size of choke given in inches.
[3] Type structure abbreviated as follows: Ant, Anticline; D, Dome; Fld, Fold or Folded; Flt, Fault or Faulted; M, Monocline; N, Nose; SD Salt Dome; Str trp, Startigraphic trap; Syn, Syncline; Ter, Terrace.
[4] Method of discovery abbreviated as follows: cd, core drilling; dr, drilling; geol, geology; geop, geophysics; grv, gravity meter; ran dr random drilling; seis seismograph; sub, subsurface geology; sur, surface geology.



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Secondary Recovery In Arkansas

Way being cleared by Legislature for intensive program in depleted areas

By ANTHONY GIBBON, Staff Writer

ARKANSAS, through legislative action, is clearing its decks for an intensive secondary oil recovery program in some of its depleted or semi-depleted areas. At the last session of the general assembly the Arkansas Oil & Gas Commission was directed to prepare a report on secondary recovery prospects and operations and to submit its findings during the current year. In accordance with the mandate the commission retained Dr. George H. Fancher, Department of Engineering, University of Texas, and instructed him to assemble data and make necessary recommendations. This work is now being done.

Oil production in Arkansas reached a peak figure of 275,000 barrels per day during May, 1925. Within a year production plummeted to about 160,000 barrels a day and thereafter the decline continued until the state averaged less than 29,000 barrels a day in 1936. Following the development of deep production in the Smackover and Cotton Valley formations the position improved and last year Arkansas reported daily oil runs averaging more than 80,000 barrels.

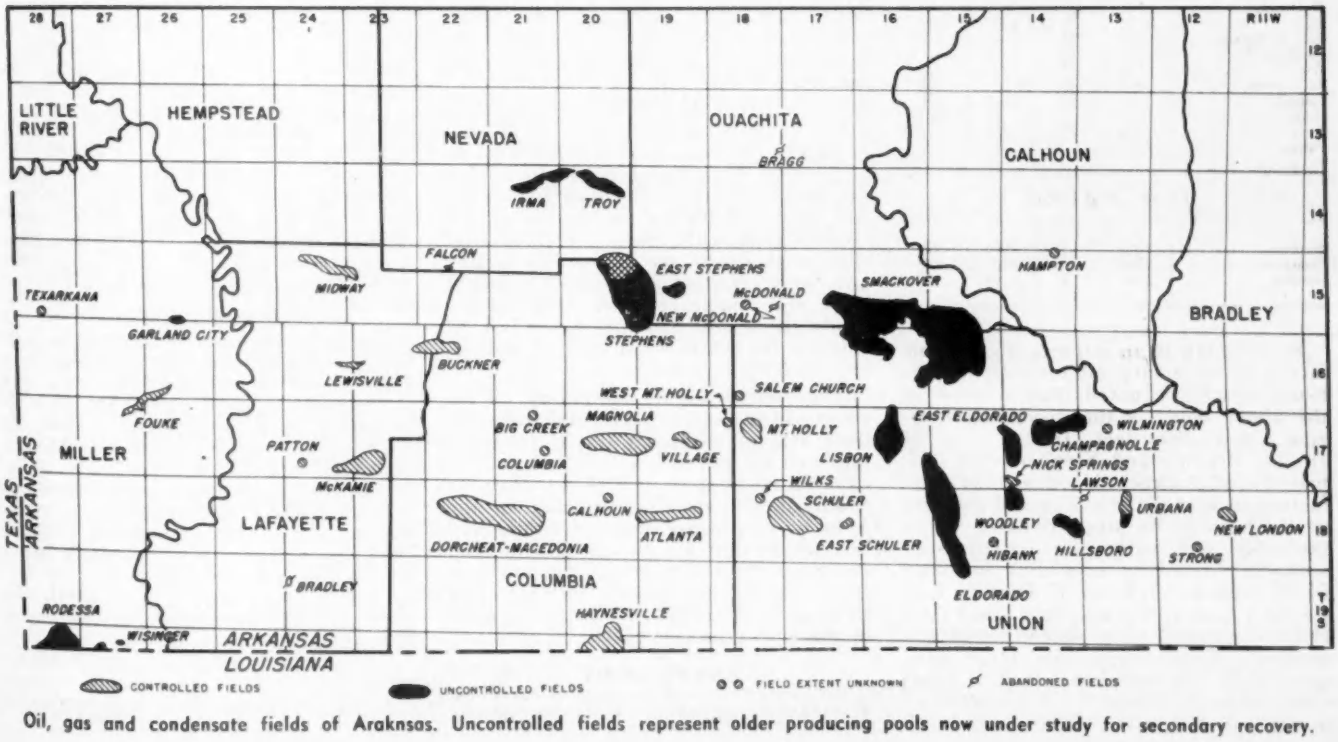
It is with the older fields which are now in the stripper stage that the Arkansas Oil & Gas Commission's study is primarily concerned. Older producing areas are fighting a losing battle against decreasing production and mounting operating costs and unless secondary recovery measures are initiated, millions of barrels of oil will be irrevocably lost.

Education Needed

The fundamental principles of secondary recovery practices are to correct mistakes made in the past and operators must be educated to the knowledge that today's practical engineering techniques permit greater effectiveness in the removal of oil from the reservoir, in some instances during the primary development phase. There is no denying that early oil development in Arkansas presents the industry with a glaring example of inefficient drilling and production practices engaged in by inexperienced and avaricious exploiters, and provide a fertile field for the trained engineer who must apply his science to correcting the mistakes of the past as well as those malpractices which still persist in some areas.

A study of secondary oil recovery possibilities in Arkansas involves problems, not only of geology and engineering, but of economics as well. There are three types of secondary oil reserves, their classification depending on the accuracy with which the reserves can be estimated. There are "proved secondary reserves" where the character and extent of the reserves are known. Then there are those areas of considerable extent where general geologic information and primary production experience give promise of success through secondary recovery methods. Finally, consideration must be given to that type of secondary reserve in which the general geologic information and primary production history gives promise of successful recovery but which cannot at this time be operated profitably under the prevailing price for crude, either because of the low average recovery obtainable or because of the heavy expense involved in development operations.

To arrive at a precise evaluation of secondary oil recovery possibilities the engineer must have complete and accurate data upon which to base his recommendations. This has not been possible in Arkansas where much erroneous information exists for the older fields which were drilled up before the



Oil, gas and condensate fields of Araknsas. Uncontrolled fields represent older producing pools now under study for secondary recovery.

establishment of the Arkansas Oil & Gas Commission concerned with the conservation of natural resources. The thickness of the oil bearing sands in many of the old fields is not known since it was not customary to drill through the sands before completion. The technique of running the production string through and below the productive horizon and perforating the casing opposite the desired zone had not been developed. The areal extent of the productive sections of the fields also may be questioned, although more accurate information on that phase has been obtainable. The amount of oil produced is known with reasonable accuracy for those sands which alone produce in any one field. However, in the case of the big Smackover field where there are several producing horizons, the data on recovery from any one sand are not available since no records were kept.

Useful Survey

With the foregoing considerations in mind the factual data compiled by the Arkansas Oil & Gas Commission in a preliminary survey covering 13 fields may be studied advantageously. The fields which are listed below are producing from the Nacatoch and Graves sands. The information is presented in general form and represents average conditions only. The degree of precision varies considerably among the different items specified. For example, the depth shown is only the approximate depth to the sand from which production is obtained and in some fields there may be a variation in this item of as much as 200 feet in wells located on the upper and lower parts of the structure.

NAME	Depth, Feet	Thickness, Feet	Area Acres	Recovery Bbls. Acre. Feet
NACATOCH SAND POOLS				
El Dorado	2100	20	7740	310
Irma	1150	19	2166	254
East El Dorado	2200	10	1380	658
Stephens (East)	1450	15	180	....
Woodley	2180	15	240	136
Smackover	2000	40	29,500	138
Lisbon	2100	20	2640	130
Bragg	1350	6	10	631
Troy	1230	12	784	48
Falcon	1180	..	....	....
GRAVES SAND POOLS				
Stephens	2100	8	3000	272
Smackover	2500	35	8165	480
Bradley	2790	5	80	467

Since depth is an important economic factor in secondary oil recovery operations, it will be noted that in none of the above fields is the producing horizon below 3000 feet. In the case of Bragg, Bradley and Stephens the estimated sand thickness is low so that other factors such as permeability and porosity would have to be proportionately more favorable to justify the initiation of secondary recovery programs in those fields. Smackover, Irma, El Dorado, Lisbon and East El Dorado have good sand thicknesses and this should result in greater oil recovery. The large area covered by the Smackover field is especially valuable from the standpoint of possible cooperative efforts and large scale operations, while Lisbon, Stephens and El Dorado are all large enough to warrant further analysis.

Data relating to oil recovery reveal that this has been exceptionally low from the Nacatoch sand in the Smackover, Troy and Lisbon fields and only fair from the Graves sand in the Stephens field. This does not mean that the sands originally were poorly laden with oil and it is possible to assume that the poor recovery is due to poor operating practices in the early days of development. It may be assumed further that it is the primary energy and not the oil that has been depleted and that considerable oil still remains to be recovered by secondary methods. This factor can only be determined by careful analysis of cores without which no intelligent picture can be had as to the possibilities.

Other Factors

Other important factors in connection with secondary oil recovery are the gravity and viscosity of the oil in place since an oil of high gravity will bring a better price, while a high viscosity oil is more difficult to flush and move through the sands and ultimate recovery will be smaller. The gravity of oil from the Nacatoch sand in the Bragg, Irma, Stephens and Troy fields is low and the viscosity is high, while oil produced from the Graves sand in the Stephens field and from the Nacatoch sand in the Lisbon field is much higher and therefore more favorable by the same token. While the gravity of Nacatoch sand production at Smackover is not as high as could be desired, the viscosity at 69.2 centipoises is itself favorable from the standpoint of secondary recovery.

Considering the above data it is evident that no field included in this study is barred from successful operation because of depth to the producing sands. Bragg, Bradley and Falcon are less favored because of their limited areas. The Nacatoch sand in the Lisbon and Smackover fields offers good possibilities even though the gravity and viscosity factors are not at optimum, while the Stephens field, based on present information, is a possible prospect from the Graves sand but the effective thickness of the sand at eight feet is rather low.

Effective natural water drives appear to account for current production from the Nacatoch sand in the East El Dorado and Bragg fields as well as from the Graves sand in the Smackover field and since such drives are generally effective and only extensive by-passing would leave appreciable recoverable oil in the sands, there would be little point in considering the water-flood type of secondary recovery in those areas.

Engineers studying secondary oil recovery in the old fields of Arkansas believe that a minimum of 20 times as much oil as was discovered by intensive exploratory activity in 1944 is within the reach of the state's producers in the form of known secondary reserves and this production awaits only the unified action of those operators who are currently receiving subsidy payments of from 20 to 35 cents per barrel to meet increased production costs.

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Wildcat Completions

■ CONTINUED FROM PAGE 49

pared with last.

Although the number of new discoveries during the first seven months of the year has held up, no areas have been opened that will cause significant changes in the whole picture, as far as is known at this time.

Increases in drilling have been fairly widespread, but the heaviest concentration of activity has been in those states being called upon for the greatest amount of oil: Texas, Oklahoma, California, Louisiana, and the group of southeastern states east of the Mississippi River, with Mississippi leading.

The total number of productive tests from January to August, this year, was 464. Last year, the total was 444. The dry-hole record for the same period of this year is 2004, and for last year, 1978.

New Pays in Old Fields

That efforts to locate new pays in old fields are meeting with some success is indicated by the percentage of increase for this year over last, a gain of 125 percent. Likewise, there has been a gain of 157 percent in the rate of discovery of distillate production.

In general, the decline in rate of oil discovered is but the continuation of a marked trend that has been going on since the beginning of the war, and before. As was pointed out in the current issue of *Ethyl News*, it is necessary to know something about the economics of the oil industry to fully understand what is going on. Involved, are a number of factors and relationships—"between crude reserves and crude production; between volume of drilling activity and the percentage of dry holes drilled in the process; between the costs of finding oil and the selling price."

There are many in the oil industry who believe that the price of oil is the most important factor involved. It frequently has been said that given a satisfactory price, the oil will be forthcoming. While price is fundamental as an incentive, the problem is not as simple as the above statement. The rate of decline in discoveries in proportion to the amount of drilling necessary to maintain the present reserve is alarming, and was so before the war.

The cost of replacing the reserves used up during the war, according to a PAW survey made in 1944, trebled and probably quadrupled since December 7, 1941. Replacement costs during 1944, as estimated by a notable economist, ran to 60 cents a barrel—a fourfold increase as compared with 1937.

Drilling Cost

The average cost of drilling a well in 1943, as estimated by the Independent Petroleum Association of America, was in the neighborhood of $37,000, after allowing for dry hole losses. In 1940, the same well would have cost only $27,182, and $26,183 in 1937.

Running right along with these increased costs is the jump in the number of dry holes completed. During 1944, for instance, approximately seven out of every ten completions were dry. In the period from 1937 to 1941, the dry-hole ratio was one out of every four or five wells drilled.

As compared with June, exploratory efforts in July slumped slightly. Against a total of 390 exploratory completions for June, July showed only 355.

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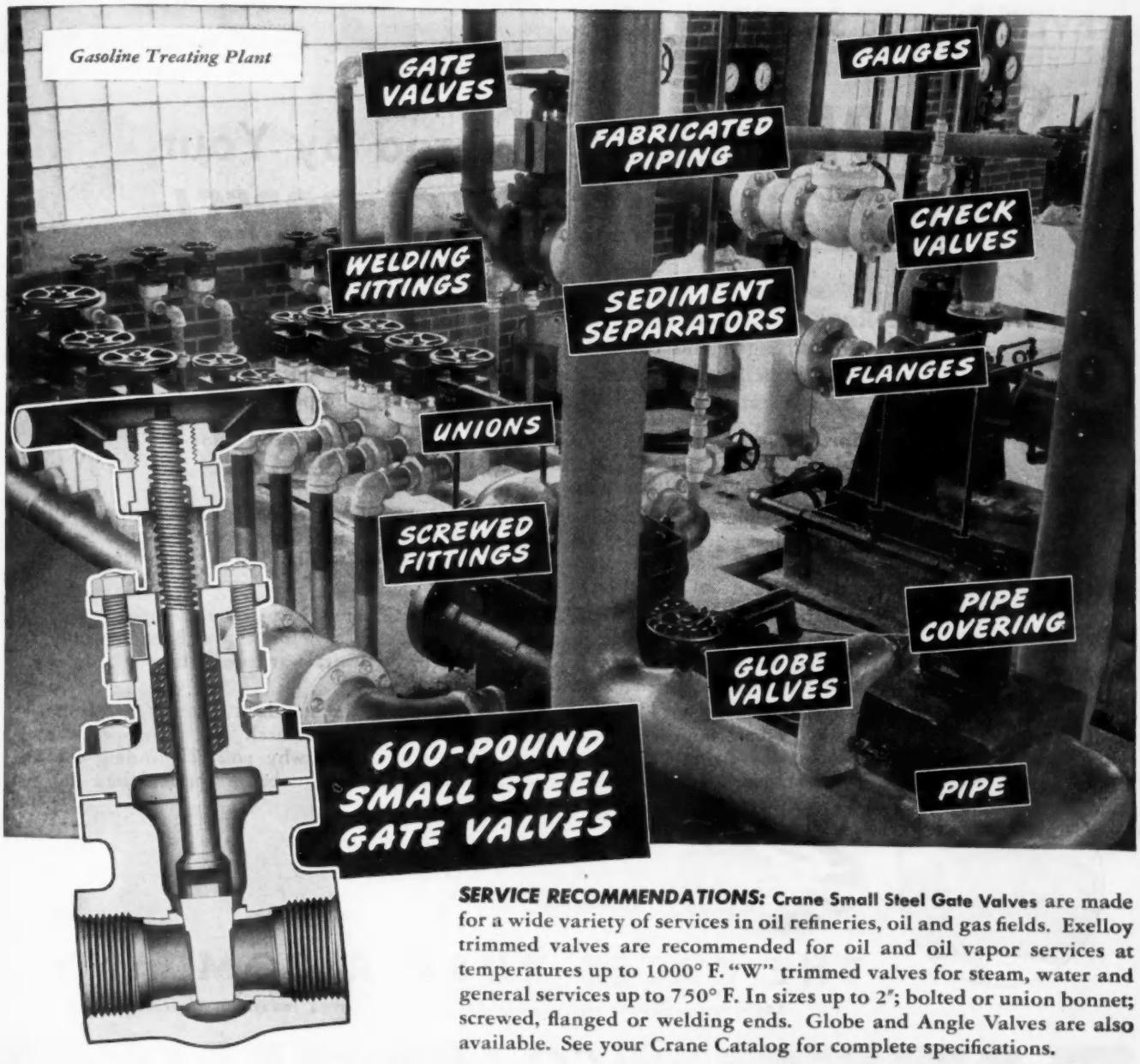

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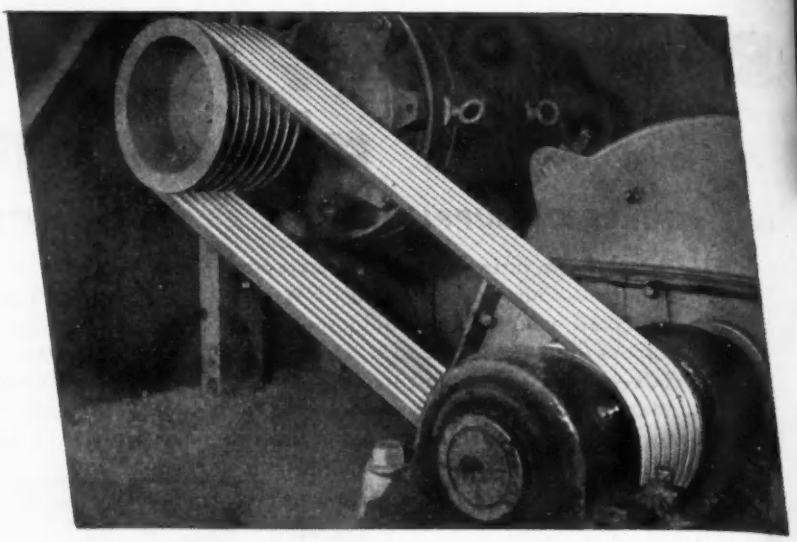

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The Outlook

Government is getting out of the oil business with a minimum of delay. Burden of making adjustments to peacetime operations will fall on industry, with state agencies again regulating production and well spacing.

* * * *

Next few months will be trying. Confusion will exist, because no one knows how much of a decline there will be in consumption as abnormal military requirements shrink. Drop in drilling may occur, but this will be temporary.

* * * *

Lifting of practically all wartime oil controls will be accomplished within a month. PAW is losing no time in ridding itself of controls. Numerous regulations already have been revoked with surprising rapidity. Other wartime controls will be relinquished as quickly as possible. Only drafting or approval of revocation orders is delaying lifting of some restrictions.

* * * *

PAO-11, first oil control order and the basic one, will be revoked immediately—at any moment. This will leave industry free to use equipment as it desires, and also will return well spacing regulations to state agencies.

* * * *

P-98-b order will be continued until the end of the third quarter, but this is only a month off. Continuation of this order will give industry preference ratings, and therefore assist in getting equipment.

* * * *

Production controls also are to be returned to state agencies quickly. PAW will not issue any monthly production certifications after October.

* * * *

PAW will close its doors quickly, except for a very small number of employes. With lifting of PAO-11 little will remain for the industry's war agency to do. Employes are being assisted in finding jobs.

* * * *

Some criticism may be directed at PAW for relinquishing controls so rapidly. Some say this will add to confusion of next few months. However, this is what industry has been asking for, and it may forestall any attempts that might be made to keep government in it.

* * * *

Elimination of wartime controls does not mean oil industry will be able to tear loose from the government. Investigations soon to be renewed by Congressional Committees and the Federal Power Commission investigation have implications of marked influence upon the industry's postwar operations. There is a growing belief in some quarters that oil is in the nature of a public utility and should be treated accordingly.

* * * *

Operators of aviation gasoline plants owned by the government face immediate shutdown with cancelling of military contracts. Unless they have made deals for purchase of the properties, there will be nothing for such operators to do but shut down their plants.

* * * *

Some war pipe lines will shut down immediately. The Southwestern Emergency Pipe Line will cease operations as soon as it can finish emptying storage tanks. Shipments through the Big Inch pipe line will be curtailed sharply.

* * * *

Many reversed pipe lines will immediately begin reversing back to their normal flow direction.

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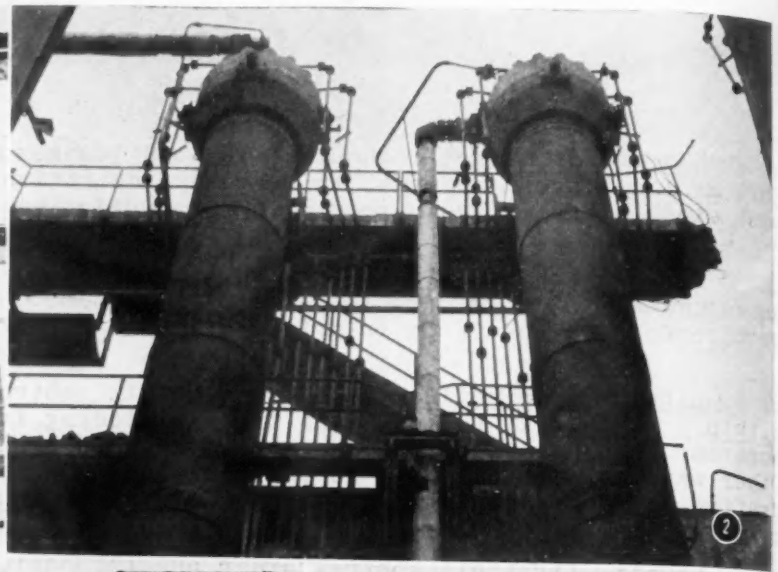
Early return to 40-hour work week for oil company employes is anticipated. Others will follow lead of Sinclair Prairie. Will be means of providing jobs for returning servicemen and checking unemployment growth.

THE NEWS IN PICTURES



1. Front, three-quarter and side views of the Messerschmitt 262A-1, German jet-propelled fighter. Its speed rated above 525 miles per hour, the plane has a wing span of 41 feet, overall length of 35.5 feet, and mounts four 30-millimeter cannons in its nose. (Acme Photo).

2. Six feet in diameter and 70 feet high, these converters in a hydrogenation stall at the German plant change coal paste into oil at the high pressure of 10,000 pounds per square inch. Plant construction plans are being brought to this country and studied by the Bureau of Mines. (Acme Photo).

3. Twisted by bombs, gutted by fire, only the framework remains of building and equipment at a Fischer-Tropsch (gas synthesis) plant between Kamen and Dortmund in the Ruhr, where synthetic fuels were made from coal. (Acme Photo).

4. The ability of our Navy to fuel at sea made it possible to operate over prolonged periods and to strike again and again. Waves break high against the sides of a tanker as she fuels the light carrier Independence. (Acme Photo).

5. Tractors are moving off the new assembly line at the Highland Park plant of the Ford Motor Company. Tanks and plane parts were made there during the war.

The Week's News

NEW problems which will fret the oil industry during the reconversion period began to emerge last week from the welter of postwar relaxation of government controls which followed announcement of Japan's surrender.

Already developing as a threat to a stable economy in the industry were the heavy inventories of products resulting from the stoppage of military operations, the vast production facilities now surplus, and the heavy cancellation of military orders.

Recession Feared—In some sections of the Administration, fears of postwar inflation are changing to apprehensions over a possible recession, due to the suddenness with which war activity halted and the consequent unemployment which is increasing daily (Page 63). There was no indication, however, that unemployment would extend to oil industry workers, since most operations have long been undermanned.

Competitive Strip-Tease—Meanwhile, the various war agencies continued a competitive strip-tease to see who could get out of business first. ODT removed all restrictions on road, rail and water movement of oil; WPB lifted its control on oil country tubular goods (Page 67); and PAW continued to throw its orders overboard, closing down its Facilities Security Division and preparing to put its Materials and Supply and Distribution Division out of action.

Lend-Lease Terminated—President Truman terminated lend-lease without advance notice (Page 61), thereby preventing any country from attempting to stock up in advance of the closing of the lunch counter.

Plants Declared Surplus—War plants built for and owned by the government began to come back in large numbers. At one swoop the War Department declared 252 plants surplus, a handful of them formerly operated by oil companies.

Ickes to Stay—Administrator Ickes admitted that he would go to London to head the Anglo-American oil agreement talks, thereby spiking rumors that he was practically out of the President's cabinet (Page 60).

PAW Recommends Cut—First effect of the end of the war on oil production was a PAW recommendation that output next month be kept at 328,000 barrels a day under the August level, returning many fields to an efficient basis. (Page 64.)

IPAA Asks Limitation—At Dallas, the oil and gas production committee of the IPAA asked that domestic crude production and foreign imports be held to levels not exceeding consumption (Page 61).

What About the Big Inch?—The O'Mahoney committee will take up the question of disposal of government-owned pipe lines and other oil facilities within a month after the reconvening of Congress. Meanwhile, the Wyoming senator has invited all interested parties in the industry to submit their views and suggestions as to what should be done with the twin Big Inch lines, the aviation gasoline refineries and the excess tankers. (Page 63).

PAW Continues at All Possible Speed To Divest Itself of Authority

PAW last week continued at full speed to divest itself of authority over the oil industry, paving the way for the issuance of orders turning well-spacing back to the states, raising the controls on liquefied petroleum gases and lifting the restrictions on marketing.

With the end of the war emergency, President Truman was expected to order returned to their owners most of the industrial properties seized because of labor disputes, including the five oil properties which were taken over when labor troubles threatened the wartime production of petroleum products.

Moving to reduce its force without delay, PAW ordered the facility Security Division to halt its inspection of oil fields, refineries and terminals, and prepared to issue 30-day dismissal notices to employes with a view to winding up the division by October. Arrangements are being made with various oil companies for the return of men who have been serving with PAW, and efforts are being made to secure places in other government agencies for personnel who desire to remain in the federal service.

Safety Ideas

As a final service to the industry, the division will send oil companies a description of a number of unusual safety ideas and devices which have been observed on visits to oil facilities.

Also to be wound up quickly are the Materials Division and the Supply and Distribution Division. The improved supply situation resulting from WPB's release of materials will leave nothing for the materials division to do. Similarly, the change in conditions will obviate the necessity of further supervision by the Supply and Distribution Division.

The decision immediately to wind up the work of the Materials Division followed a two-day meeting with Materials Division directors of the five district offices with Washington officials, at which it was agreed that the regional divisions would go out of business September 30 and that the headquarters office from then on would operate on a skeleton basis purely for the purpose of protecting the interest of the industry so long as WPB continues any of its functions that might have an effect on the procurement of materials.

With the exception of such controls as might be required to deal with specific problems, all orders and directives will be terminated by October 1.

The field division directors expressed the belief that while elimination of restrictions on materials would in theory ease the materials problem, there would be more or less tightness with regard to some types of materials and equipments which might not begin easing for a matter of 30 days or more. The situation, it was agreed, is uncertain because of the impossibility of estimating the effects of military and other cutbacks on some items that had been critically tight while the war continued.

The same uncertainty was expressed regarding drilling prospects for the next few months, the prevailing impression being that cutbacks would be minor except in District 4, where as much as a 50 percent reduction was indicated by the first of the year. This is largely due to a contemplated shutdown of drilling in Wyoming and the normal winter reduction of operations throughout the Rocky Mountain area.

PAW officials estimated that the supply of oil country tubular goods will continue adequate even though the mill space directive for 278,000 tons will terminate at the end of the quarter.

Tool Joints

With respect to other materials, there was some divergence of opinion regarding the outlook for tool joints, but the majority of Materials Division officials felt that the supply will continue to be tight for at least a short time. Regarding lumber, the conference was informed that the fourth quarter and all consumers will be on their own so far as procurement is concerned; however, it was estimated, the supply is likely to be adequate, principally because of military cutbacks.

The way for dissolution of marketing operations of PAW was paved August

23 by revocation of virtually all orders, directives and recommendations restricting the sale and purchase of petroleum products.

So far as oil-industry customers are concerned, they will again buy under prewar conditions within a period of two or three weeks, even to the extent of again being able to use credit cards at filling stations.

A number of aviation gasoline plants built and owned by the government and operated by oil companies were among the 252 plants declared surplus by the War Department August 23. These plants will soon be made available for disposal by RFC.

Most of the government-owned plants operating for the War Department which were not listed have been selected tentatively to be held in standby for national defense purposes or retained for storage facilities, but some will remain in limited production for the manufacture or research of test items. It is expected that some of the retained plants, however, will be released from time to time as conditions permit.

Well Spacing

Announcing that federal well spacing restrictions would be lifted, Administrator Ickes pointed out that there is no law under which they can be continued and expressed the hope that the states, by experience, will have realized the advantages of careful spacing and continue to apply some control.

Ickes admitted that his remarks were directed primarily at California, where two attempts to enact conservation legislation have been defeated in referenda.

At a press conference August 23, the administrator discussed a number of phases of the situation created by the end of the war.

He said he had no objection to the Department of Justice going ahead with prosecution of its anti-trust suit against the oil companies and American Petroleum Institute.

Transportation facilities will be adequate to move all the gasoline and fuel oil wanted by the public, although there may be some spot shortages off and on for a time until the situation is straightened out.

Argentine Views

There has been no change in his views on the barter of oil for Argentine flaxseed and linseed oil.

"I still have a big question mark in my mind about shipping oil to Argentina," he said. "Other questions are involved than the availability of oil. I didn't want to get overboard in the field of the State Department, but I guess you know what they are."

Control over the Caribbean oil supply will be lifted in the near future, Ickes said.

"We are getting ready to remove all controls just as quickly as possible," he declared. "We hope by the end of the year to have made a fond farefell to the oil industry. Ickes challenged contentions that the discovery of atomic energy made conservation of oil and gas unnecessary.

"I can't subscribe to the theory that it is not necessary to conserve every natural resource," he said.

"God knows we have wasted enough gas in this country without entering into competition now to see who can waste the most because you may be able to put an atom in your pocket and take it home."

Sec. Ickes to Stay — At Least for Time Being

Secretary of the Interior last week set at rest doubts that he would long continue to attend President Truman's cabinet meetings by indicating that he would, after all, go to London to conduct the negotiations on the revised Anglo-American Petroleum agreement.

He made his statement a day after a rather extended talk with the President during which, apparently, an agreement was reached that he would retain his portfolio, for a time at least.

At the White House, President Truman definitely put an end to rumors that he and his cabinet member were at odds.

The President said Ickes would stay, could stay as long as he desired. His statement was flat and definite.

Ickes explained that the delay in the negotiations has been due to the fact that the new British government has not yet proposed a definite date for the meeting. "So far as we are concerned, the earlier the better," he said.

Aside from Deputy Administrator Davies, Ickes said he had not decided who would comprise the mission going to England.

210 Million Barrels Moved Through Big Inch Line

More than 210 million barrels of crude oil have been moved through the Big Inch pipe line during the three years it has been in service, it was reported August 25 by Administrator Ickes.

During the last 12 months of operation, the line moved 114,261,589 barrels of oil, a daily average of 313,045.

The $78,500,000 facility, which began operations full-length on August 14, 1943, has taken in an operating revenue of more than $113,000,000 but no figures were available to show what profit, if any, remained after deductions for depreciation, amortization of investment and interest on working capital.

"It would be difficult to overestimate the importance of the part the Big Inch has played in defeating the Axis powers," Ickes said. "It would be equally difficult to make a precise appraisal of its contribution to the victory of the United Nations and to the well-being of their citizens.

"With other means of transporting oil inadequate, the Big Inch definitely became the facility which made it possible for us to meet the petroleum requirements of the Allied armies and thus definitely shorten the war. It likewise prevented an oil shortage on the Atlantic Seaboard."

Only by the operation on an 18-day turn-around basis of some 25,000 additional railroad tank cars would it have been possible to have moved into the East Coast district the oil transported through the pipe line, Ickes said, and such rail service would have been impossible of accomplishment.

With the government lines built during the war, it is estimated that the United States now has 85,076 miles of trunk lines and 56,714 miles of gathering lines, a total of 141,790 miles of pipe line.

Contracts for 32 New Tankers Cancelled

End of the war is reflected in action by the United States Maritime Commission cancelling contracts for 32 tankers and 102 other ships, involving $355,000,000, and for $70,000,000 of special military equipment for the Navy.

Twenty-four of the cancelled tankers were coastal types being built for lend-lease to Great Britain, 12 of them by the New England Shipbuilding Corporation, South Portland, Maine; six by Avondale Marine Ways, Inc., Avondale, Louisiana, and six by the United Concrete Pipe Corporation, Los Angeles.

The remaining carriers were large tankers, five of them under construction by the Kaiser Company at its Swan Island, Oregon, yard; two by Marinship Corporation, Sausalito, California, and one by Welding Shipyard, Inc., Norfolk, Virginia.

Production Under Way at Shell's Recycling Plant

Production has begun at Shell Oil Company's new cycling plant at Sheridan in Colorado County, Upper Texas Coast, 25 miles southwest of Columbus and Eagle Lake. This is the company's first such plant.

Supplied by the Sheridan gas condensate field, the cycling plant at full production will process 100 million cubic feet of condensate gas daily, from which can be extracted such products as propane, isobutane, normal butane, isopentane, natural gasoline and distillate.

After these products are removed, the plant returns the dry gas, at a pressure of about 4000 pounds per square inch, to its original formation to maintain reservoir pressure and preserve a supply of gas for future use. It is well accepted that the cycling of a condensate field is one of the most effective types of conservation practiced.

At Shell's Deep Park refinery, 16 miles southeast of Houston on the ship channel, aviation fuel and high test motor fuel will be made from some of the products extracted at the Sheridan plant. Others will be used as fuel for heating and cooking, as fuel oil.

Construction of the Sheridan plant, which employs 50 persons, was begun in June, 1944. Partial production began on August 11, 1945. In addition to building the plant from the ground up, Shell has constructed houses for 35 employes near the plant site. Electric power, water and gas for these houses will be supplied by the main plant.

IPAA Group Urges that Production, Imports Be on Consumptive Levels

Immediate strict limitation of domestic crude production and foreign oil imports to levels not exceeding consumptive rates so that the additional problems of excessive supply will not be created are urged by the oil and gas production committee of the Independent Petroleum Association of America in resolutions adopted at a special meeting of the committee in Dallas, August 20.

The resolutions recommended to the IPAA membership call for the state regulatory bodies to establish the allowable production for each controlled oil field to no more than the maximum efficient rates of production; that monthly consumptive demand estimates be made by the Bureau of Mines when PAW discontinues this operation; that in order to prevent waste, the above ground stocks of crude be kept at minimum working levels; that Congress be requested to restrict imports of crude oil through import taxes, import quotas, or through such other procedure as it may determine; that production restrictions be placed on flush fields only; and that well spacing policies be adopted by all state regulatory bodies.

Cooperation Urged

It was urged that oil and gas regulatory bodies of the various oil producing states give careful consideration to the actual consumptive demand rather than nominations of purchasers and limit the production of their respective states to an amount not in excess of the total consumptive demand in order to prevent waste.

"Production in excess of consumptive demand brings about not only waste but inequities through selective buying resulting in a lack of ratable purchases, thus preventing each producer from having his fair share of the market," one resolution pointed out.

The committee recommended to the IPAA membership that the regulatory bodies of the oil states be requested and urged to effectuate well spacing policies in both oil and gas fields which will properly protect the correlative rights of the producers as well as land and royalty owners.

Opportunity Asked

In its resolution on restriction of imports, the committee urged that "the oil producers of this nation should be given an opportunity, with adequate tools consisting of necessary materials and labor, an adequate price and a sound tax program, to continue to discover, develop, and make available ample supplies of petroleum is given to furnishing the needs of our nation through imported oil."

"If at any future time imports are necessary to supplement the domestic supply they should be only in amounts required to furnish adequate government and civilian requirements," the committee recommended.

Lend-Lease Cancellation Stops Much Oil Shipments

Lend-lease shipments of oil and other commodities were terminated abruptly August 21 by an order from President Truman bringing the wartime reciprocal aid program to an end.

It was announced at the White House that all purchasing missions of foreign governments had been informed the program would be discontinued upon receipt of the notices.

Result of the President's action will be to put all lend-lease countries on their own so far as future procurement of United States commodities is concerned. The cancellation affected all outstanding contracts except where the governments agreed to take them over or where it was in the interest of the United States that they be continued.

Under the order, the Foreign Economic Administration is to negotiate with Allied governments for possible procurement by them of lend-lease inventories now in stockpiles or in process of delivery.

During the 4½ years of lend-lease, more than $41,208,000,000 in supplies and services were furnished Allied governments, including about $2,000,000,000 worth of petroleum. Large quantities of oil products also are included in the $1,000,000,000 to $1,500,000,000 worth of goods held in stockpiles abroad. Uncompleted contracts for non-munitions and finished goods which had not yet been transferred under lend-lease were estimated at approximately $2,000,000,000.

The latest report on lend-lease, covering operations up to March 31, last, showed that transfers of petroleum products in the four years the program then had been in effect aggregated $1,890,375,000, or 4.8 percent of all lend-lease aid. Of this total, $1,293,274,000 worth had gone to the United Kingdom, $84,878,000 to Russia, $84,608,000 to Africa, the Middle East and Mediterranean area, $216,000 to Latin America, $141,702,000 to Australia and New Zealand, and $118,289,000 to China and India.

Early Canceling of Aviation Gasoline Contracts Likely

Termination of all military contracts for 100-octane aviation gasoline over a period of the next 30 days was recommended by PAW August 22 to the Reconstruction Finance Corporation through which all purchases of the fuel have been made for the armed forces. Stockpiles of 100-octane were reported by PAW to be adequate to meet military requirements for several months to come.

Announcing PAW's action, Deputy Administrator Davies disclosed that United States production of 100-octane gasoline at the close of the war was 530,000 barrels a day out of a total output of 600,000 barrels daily for all United Nations plants.

Davies emphasized that the war-end production represented an increase of approximately 750 percent in output since Pearl Harbor, when about 58,000 barrels daily was being produced in the United States and less than 22,000 barrels in other Allied countries. Since Pearl Harbor, he said, more than 360,000,000 barrels of the fuel has been produced in facilities costing approximately $1,000,000,000, which were nearly 95 percent completed before the end of the war.

Davies said that blenders of 100-octane gasoline and manufacturers of components have been advised that their present stocks will be purchased by the Government. Purchasing of aviation gasoline, handled since June, 1941, by PAW and RFC, will be returned to the Army and Navy.

The termination of the program will make adequate supplies available for refiners to return to prewar schedules for production of premium grades of civilian gasoline, he said. All refiners will have adequate supplies also for upgrading gasoline to prewar standards.

U. S. Military to Supply Oil To Forces Still in Europe

With the termination of combined military operations on the European continent and dissolution of the Supreme Headquarters Allied Expeditionary force, military personnel remaining in Europe, excepting Army detachments in the British area, will receive their petroleum fuels and lubricants direct from United States military sources instead of through Great Britain, under a decision of the joint chiefs of staff.

The direct shipments will include those for essential civilian requirements for which the United States military has responsibility, it was said.

Under arrangements which have been in effect since establishment of the Supreme Allied Command, the British have had provisioning responsibility for petroleum products for all requirements in the United Kingdom and northwest Europe, with certain minor exceptions. Petroleum products obtained from sources owned by United States nationals to meet this provisioning responsibility have been obtained through lend-lease. Products issued to U. S. forces in the United Kingdom or on the continent have been credited to reciprocal aid, with appropriate charges for storage, handling, blending, packing, and transportation.

The arrangements for fueling the combined operations were set up due to the necessity of supplying American forces through the United Kingdom before D-day and to inability to utilize continental ports to receive all bulk petroleum products after D-day. Due to reduced requirements such conditions will not exist after the termination of combined operations and the establishment of zones of occupation under national commanders.

Two Petroleum Research Laboratories Are Planned by Standard (New Jersey)

Construction of two major petroleum research centers will be started as quickly as steel and other materials are available and will be completed late in 1946 or early 1947, it was announced by Standard Oil Company (New Jersey) through Eugene Holman, president.

The program will provide scientists of Standard Oil Development Company, central technical organization of the Jersey Standard group, with the most modern and extensive research facilities in the oil industry, it was said.

The new centers will be at Linden, New Jersey, and Baton Rouge, Louisiana, at which places Standard Oil Development Company already has large laboratories. The expansion program ultimately may involve the expenditure of $8 million. At the outset, eight buildings containing a total of 350,000 square feet of space will be erected in a landscaped area of 60 acres near Park and Linden Avenues, in Linden, New Jersey, and one building containing 35,000 square feet will be put up at Baton Rouge, Louisiana. Applications filed with the War Production Board for a major portion of the project have been approved. Construction work alone is expected to provide 1,800,000 man hours of employment. Broken down into days, this will mean 225,000 eight-hour work days.

Holman said the company has plans and blueprints ready and has set the start of work for the earliest possible moment in order to contribute to jobs during the reconversion period. To help staff the new facilities, an increase of at least 20 percent in the present research and technical group of 2100 will be necessary.

R. P. Russell, president of Standard Oil Development Company, said the new laboratories will be used not only for developing improved products from oil and processes for producing them, but in extensive work on extending sources of supply to oil products would be carried out. This latter work will include production of oil from natural gas, gasification of coal, production of coal, production of oil from coal, and production of oil from other carbonaceous deposits such as oil shale.

"We believe these great research facilities can be an important factor in keeping the American oil industry the leader in fuels, lubricants and production of chemicals from oil and gas," Russell stated. "All practical discoveries flowing from this work will be made available to the entire industry in accord with the policy we have followed for many years."

Sinclair Prairie Returns To Forty-Hour Week

Sinclair Prairie Oil Company returns to a 40-hour work week for both office and field personnel effective August 27.

It is the first major oil company to shorten its hours. Other concerns are expected to adopt the shorter schedule, especially for employes on an hourly basis, but many are undecided as how rapidly they will be able to do this.

Ickes Suggests Control on Oil as Coal Substitute

Desirability of some control on the use of higher-value oil as a substitute for coal was suggested August 23 by Administrator Ickes in discussing the extent to which conversions to oil may contribute to the easing of the anticipated shortage in domestic hard coal supplies next winter.

The administrator disclosed that 4000 applications for authority to convert were received in a single week following announcement that coal supplies would be tight, mostly for domestic use.

However, he pointed out, there is a limitation in the availability of equipment, both replacement and new, "and one big, overshadowing question of economy and national policy, and that is, is it wise from the point of view of national economy and the light of our experience during the war to use this more valuable fuel when another fuel can do the job as well?

"That is something I cannot decide," he said. "I don't know that anyone can decide it, but I think it will bear a good deal of careful thought.

"I think the time is coming when we will have to depend on imports of oil and it would be too bad if we had so little oil that we would be hard put to it to defend our country in the event of another war."

Producing Firms' Receipts Were $675 Million in 1942

Oil and gas production corporations had total receipts of $675 million in 1942, the first year the United States was at war, but refinery corporations reported an income in excess of $7 billions, it was disclosed August 23 by Secretary of the Treasury Vinson.

Figures compiled for Vinson by the Internal Revenue Bureau showed that 3943 corporations engaged in crude oil, natural gas and natural gasoline production took in $674,938,000 in 1942, on which 1891 companies paid $23,619,000 in income and excess profits taxes, while 553 corporations engaged in field service operations had total receipts of $75,953,000, on which 196 paid taxes of $2,602,000. Returns from 416 refining corporations showed total receipts of $7,112,364,000, with 276 corporations paying taxes of $190,990,000.

No Net Income

For tax purposes, 1728 producing corporations, 296 field service companies and 121 refiners showed no net income, and the remaining 270 producing, 61 field service and 119 refining corporations were inactive.

The tax-paying producing corporations, Vinson reported, had total combined receipts of $412,626,000 and an aggregate net income of $65,399,000, of which $7,802,000 was subject to excess profits taxes. Their taxes included $17,750,000 on income, $101,000 on declared value excess profits and $5,769,000 on excess profits. The deficit companies, with total receipts of $151,414,000, had a deficit for tax purposes of $24,541,000, but paid dividends, in cash and assets other than their own stock, of $5,942,000, compared with $45,597,000 paid by the taxed companies.

Field Service

The taxable field service companies showed total receipts of $75,953,000 and net income of $6,910,000 of which $863,000 was subject to excess profits tax. Their taxes included $1,940,000 in income, $11,000 on declared value excess profits and $651,000 on excess profits, and they paid dividends of $1,263,000. The untaxed companies had total receipts of $34,945,000 and a deficit of $3,967,000 with dividend payments amounting to $242,000.

The 276 tax-paying refining corporations reported total receipts of $7,028,754,000 and net income of $496,902,000 of which $39,651,000 was subject to excess profits tax. Their tax payments included $160,167,000 on income, $73,000 on declared value excess profits and $30,751,000 on excess profits, and their dividend payments aggregated $300,125,000.

The untaxed corporations reported compiled receipts of $83,610,000 and a deficit of $1,738,000; dividend payments were $84,000.

Oil Maps of Japanese Homeland Released

With a timeliness indicating that it had played an important part in preparing the foundation for our military strategy in the East, the Bureau of Mines last week released two maps of the Japanese homeland showing the location of the oil refineries, synthetic oil plants, chemical works and mines and metallurgical plants that now come under the control of the United Nations.

Despite Japan's careful secretiveness for many years and the virtual blackout of enemy information that followed Pearl Harbor, the maps showed that the bureau was able to collect voluminous information on the network of mines and plants that helped her to fight the war.

The information developed by the bureau will be utilized by civilian and military authorities administering the affairs of Japan, maybe for some years.

The maps show the extent of Japan's own oil production in the home islands —not enough to meet her needs; but had she been allowed fully to exploit the resources of the overrun countries she could have been on the road to world domination, Bureau Director R. R. Sayers pointed out.

OPA Fears Reduction in Oil Price if Ceilings and Subsidies Are Lifted

Warning that the oil industry is threatened with deflation rather than inflation, Price Administration officials last week disclosed that pleas for retention of ceiling prices now are being received from operators who only a few weeks ago were urging that they be raised or eliminated. It was pointed out, the oil industry is faced with reduced over-all demand for its products.

Navy Plans

How sharply demand will be reduced is indicated by Navy plans to tie up ¾ of the Fleet in the near future. The Navy plans to keep ¼ of its ships at sea at a time, sending each quarter out at intervals timed to keep the Fleet in good shape. Merchant shipping will be active for some time to come, but eventually demand for space will dwindle and there will be an excess of cargo carriers.

The increase in civilian consumption, of course, will be far from sufficient to offset the reduction in military requirements, and there is considerable doubt how far the states can cut back production rates.

Information reaching the OPA indicates that current production is about 1,200,000 barrels daily over peacetime levels. There are very heavy supplies of residual fuel oil, considerable 80-octane gasoline and volumes of lubricants and other products overhanging the market as a result of military stocks. Also a factor is the inventory of 100- and better octane aviation gasoline.

Under the circumstances, OPA officials are fearful that the elimination of ceiling prices on oil would be disastrous for the industry, since the abandonment of ceilings would mean also abandonment of the stripper-well and high-cost subsidies and it is believed that thousands of such wells would go out of production if federal support is withdrawn.

Preparing to resign at the end of the month to join his brother-in-law, C. P. Moore, in the food business in Richmond, Virginia, Orville Judd, associate director of the fuel price division of OPA, said it is the plan of the agency to keep ceilings in effect "so long as supply and demand are not in balance."

Judd urged that the industry should think along the line "of protecting the gains made during the war," and develop some subsidy for the production subsidy which could be handled by one of the permanent departments, such as Interior, as a conservation measure to keep stripper and high-cost wells in production.

Funds Appropriated

He pointed out that funds for continuation of the subsidy until next June 30 have been appropriated by Congress, and suggested that any satisfactory method of maintaining payments which might be worked out could be put into effect by John W. Snyder, director of War Mobilization and Reconversion, and Stabilization Director Davis as a temporary reconversion measure until Congress could pass the necessary legislation for a permanent plan.

While the Administration is removing all war controls as rapidly as possible, there is growing concern in some quarters over the possibility that the experience which followed the last war might be repeated.

Observers who recollect 1918 point out that after the last war all controls were quickly jettisoned and an inflation of production and prices followed in a boom which burst in 1920, and see possibilities that the country is preparing to follow the same road again.

Views Invited on Disposal Of U. S.-Owned Pipe Lines

A general invitation to the oil industry to submit their views and suggestions as to the disposition of government-owned pipe lines, tankers, refineries and related facilities was extended last week by Kurt Borchardt, counsel for the surplus property sub-committee of the Senate Military Affairs Committee.

The sub-committee and the special committee on postwar economic policy and planning will sit with the Senate Petroleum Investigating Committee at hearings on the subject which Chairman Joseph C. O'Mahoney announced would begin in late September or early October.

Labor organizations and state and local governments are invited to submit their views and recommendations. All communications on the subject should be addressed to O'Mahoney, as chairman of the Petroleum Investigating Committee.

Discussing the matter at a news conference August 23, Administrator Ickes said PAW has not come to any conclusion as to the best method of disposing of the properties, pointing out that it is largely a matter for Defense Plant Corporation and the Surplus Property Board.

However, he said, it is a major program that the government will have to decide and, if invited, he and PAW experts would be glad to submit their ideas during the hearings.

Rules That Led to Record Rail Movement Are Lifted

Revocation of all of the orders and regulations which made possible the record-breaking war movement of petroleum by rail was announced last week by the Office of Defense Transportation.

Also revoked were the restrictions on the use of tank trucks, leaving the industry free to use its normal procedures for over-the-road movement.

As a final step toward returning control of transportation to the industry, the ODT lifted all restrictions on the shipment of crude and products on the inland waterways system, including the Great Lakes. The restrictions were embodied in General Order 19, issued in August, 1942, requiring permits for vessels moving petroleum in the opposite direction of the desired flow, such as westward on the New York State Barge Canal or southward or westward on the Mississippi system from easterly points, and subjecting vessel owners to the specific direction of ODT when required, regardless of existing contracts, charters or leases.

It was estimated by Lawrence C. Turner, director of the waterways transport department, that the elimination of cross and back hauls contributed greatly to the record load of 1,730,000,000 barrels transported during the war on the inland waterways.

Government Takes Bids on Federal Royalty Oil

Bids for approximately 360,000 barrels of crude oil accruing to the Government as royalty from Federal leases in Colorado and Wyoming oil and gas fields will be opened in Washington August 27, it was announced last week by the Interior Department.

The oil to be offered will include about 180,000 barrels expected to be derived during the year beginning September 15 from the Wilson Creek, Iles and Rangely fields in Colorado, with the exception of production from the Mancos shale in the Rangely field, and approximately the same amount from the Lance Creek, East Lance Creek, Little Buck Creek (adjacent to East Lance Creek), Cole Creek and Salt Creek fields in Wyoming, with the exception of royalty crude from the Lance Creek and Salt Creek fields now being disposed of under contract, and from the Tensleep formation in the Salt Creek field.

22 Pools in Eight States Added to OPA Subsidy List

Twenty-two more pools in eight states were added to the list of subsidy recipients by the Office of Price Administration August 25, with payments to be effective as of August 1.

Premiums allowed ranged from 2 to 35 cents a barrel as follows:

Arkansas: Nick Springs (Travis Peak), 24 cents.

Illinois: Maunie South, 20 cents.

Kansas: Graber, 5 cents; Russell North 35 cents; Wherry, 5 cents.

Michigan: Temple, 2 cents.

New Mexico: Benson, 4 cents.

Oklahoma: Dora, 10 cents; Locl, 5 cents; Macomb South, 35 cents; Palacine, 20 cents; Wellston North, 35 cents.

Texas: Hull-Silk-Sikes-Caddo, 25 cents; Iatan-North, 15 cents; Loving, 25 cents; Olson, 17 cents; Smyer, 20 cents; Vincent (4000 to 5000 feet), 5 cents.

Wyoming: Half-Moon, 35 cents; Maverick Springs, 28 cents; Pitchform, 34 cents; Shoshone, 35 cents.

Cutback of 328,000 Barrels Is PAW's First Postwar Production Suggestion

A cutback of 328,000 barrels daily in crude production in September was urged upon the producing states last week by PAW in the first of its postwar "production recommendations."

The agency's estimate of needed output called for 4,572,900 barrels of petroleum and 339,170 barrels of natural gasoline and other petroleum liquids daily, compared with the August certification of 4,900,900 barrels of crude and 339,100 barrels of other liquids.

Lower crude production was recommended to seven of the states, five of them in District 3, while slight increases were suggested in two District 1 states.

The September figures call for cuts in output in Arkansas from 80,000 to 75,000 barrels daily; Louisiana, from 360,000 to 350,000 barrels; Mississippi, from 53,000 to 47,000 barrels; New Mexico, from 105,000 to 100,000 barrels; Texas, from 2,190,000 to 1,978,000 barrels; Wyoming, from 118,200 to 93,200 barrels, and California from 952,000 to 886,000 barrels. The increases were in New York from 13,000 to 13,500 barrels, and Pennsylvania, from 37,000 to 37,500 barrels. The only change in production of natural gasoline and condensate would be in California, where a 70-barrel a day increase was estimated.

Only in the case of California, where the controls under PAO 19 are being continued for the time being, will the certification be compulsory. In the case of all other states the actual rates will be decided by the state oil authorities.

Announcing the figures August 22, Deputy Administrator Davies said production rates would be recommended also for October, but by the end of that month the regulatory bodies are expected to have regained their "normal peacetime channels of demand forecasts."

Davies explained that the cuts in District 3 will permit operations within the maximum efficient rates of production. The cut in Wyoming, he said, is due to the discontinuance September 1 of compensation on some 25,000 barrels daily of fuel oil moving to the Northwest Pacific.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED August 25	August 18
Alabama	950	950
Arkansas	79,950	80,100
California	915,500	935,200
Colorado	10,700	12,150
Florida	200	200
Illinois	198,800	203,700
Indiana	13,450	13,450
Kansas	266,550	275,000
Kentucky	28,850	29,500
Louisiana	365,050	366,200
North	69,350	70,500
South	295,700	295,700
Michigan	47,000	48,350
Mississippi	53,650	55,100
Missouri	100	100
Montana	22,675	22,000
Nebraska	850	850
New Mexico	103,700	103,700
New York	13,800	13,700
Ohio	5,750	6,450
Oklahoma	389,000	391,000
Pennsylvania	34,450	37,100
Tennessee	35	35
Texas	2,222,700	2,222,700
Upper Gulf Coast	567,650	567,650
East Texas Field	380,950	380,950
Rest of Eastern Texas	145,600	145,600
Lower Gulf Coast	255,650	255,650
Southwest Texas	83,850	83,850
South Central Texas	21,600	21,600
West Texas	526,600	526,600
North Texas	152,800	152,800
Panhandle	88,000	88,000
West Virginia	7,100	8,200
Wyoming	115,950	112,100
Total United States	4,896,760	4,937,835

Yates Field, West Texas Maximum Allowable Is Cut

The Texas Railroad Commission's first allowable cutback since the war ended came in an order issued August 23 reducing the maximum allowable for the Yates field, West Texas, from 47,133 barrels to 42,572 barrels daily.

In its order the commission pointed out that the reduction, accomplished by placing the field on a 28-day producing schedule instead of a 31-day schedule, was necessitated by the end of the war and the lack of pipe line and tank car facilities for movement of Yates crude.

Receipt of a September production recommendation from PAW was announced by Olin Culberson, commission chairman. The recommendation calls for a production of 2,144,000 barrels daily of all petroleum liquids in Texas, including 1,978,000 barrels of crude oil. Earlier in the month (before V-J Day) PAW certified a daily production of 2,356,000 barrels daily of all liquids including 2,220,000 barrels of crude oil.

The August statewide hearing, originally scheduled for August 16 but postponed to receive new allowable recommendations for PAW, will be held in Austin, Thursday, August 30.

Texas September Allowable To Be Cut 217,000 Barrels

In line with PAW's recommendation that Texas crude production be reduced, the Texas Railroad Commission will establish an allowable for September that will be 217,000 barrels under current estimated output.

Chairman Olin Culberson said 54,585 barrels being produced daily in fields exceeding the maximum efficient rate of production (as estimated by the commission) would be cut first, then the remainder removed by increasing the shutdown days for the rest of the state. Culberson thought the producing days in the rest of the state would be either 23 or 24, compared with 26 during August.

The majority of the pools exceeding their maximum producing rate are on the Gulf Coast and produce sweet oil. Among the fields exceeding their maximum efficient rate are Tom O'Connor, Hilbig, Greta, Greta deep, Heyser, Jay Welder, LaRose, Anahuac, Caplen, Cleveland, Fisher's Reef, Hastings, Harden, Humble Light, League City, Lochridge, Markham, North Withers, Old Ocean, Oyster Bayou, Pickett Ridge, Rowan, Stowell, Tomball, Webster, Willow Slough, Boyle, Cedar Hill, Flour Bluff, Richard King, East White Point, Van New Hope, McElroy, Ownby and KMA.

Rumors continue to come into Austin of the needs for a cut but late in the week buyers had not yet indicated their desires. Chairman Olin Culberson explained that the commission, in making its flat cut after all fields are reduced to their maximum efficient rates, would not distinguish between qualities of crude but would treat all alike. However, he pointed out that the nominations might reduce the demand for crude from certain fields which would then be cut before any flat cut was applied generally.

Stories circulated in Austin concerning cuts here and there which were not necessarily reflected in the telegram from PAW. Stanolind was losing a market for 29,000 barrels of West Texas crude moving out of Cushing, Oklahoma, by tank car. Of course, the tank car movement to California, 27,000 barrels daily, was out of the way.

It was reported likewise that the tanker movement of West Texas crude from Corpus Christi to Beaumont and thence to the Big Inch would be eliminated in a few days.

Meanwhile, operators should not forget that another statewide hearing is to follow in 14 days at which time data will be needed to form the basis for October allowables. Probably the commission will recess this hearing until late in the month, as it did the August hearing, in order that conditions may settle a little more before any order is entered.

Magnolia Offers $660,000 Cash for Louisiana Leases

Magnolia Petroleum Company is reported to have offered Louisiana $660,000 in cash and more than $12 millions in possible oil royalties for oil leases on 27 blocks of land of 137 in a tract extending 30 miles out into the Gulf of Mexico.

Seventeen other tracts were sought by The Superior Oil Company and The Pure Oil Company, and offers also were made on other tracts sought by Magnolia, but Magnolia's bids were the highest.

The 27 blocks on which Magnolia turned in the highest bid, consist mostly of 5000 acres each, and are scattered all over the 30 x 30 mile section of Gulf.

Pure Oil was the only bidder on 15 tracts, with offers as high as $5100 bonus for smaller blocks near shore in the northeast and northwest corners, and $2600 for full blocks farther out.

Industry Stocks of Refined Products Continue Seasonal Trend During Week

The industry's stocks of refined products continued their seasonal and desirable trend during the week ended August 18. Substantial quantities of gasoline were taken from storage, while stocks of both distillate and residual oil increased sharply.

Refinery output of products rose materially, as crude oil runs to stills increased 68,000 barrels daily over levels of a week ago. The daily average crude throughput of refineries was 4,934,000 barrels, only 10,000 barrels under the all-time high of mid-July.

A total of 15,890,000 barrels of gasoline was made during the week, 343,000 barrels more than in the preceding week. Nevertheless, stocks of gasoline declined 322,000 barrels and stood at 85,985,000 barrels, or 6 million barrels above a year ago.

Production of gas-oil and distillate fuel oil rose 262,000 barrels above a week ago in totaling 5,344,000 barrels, an all-time peak. Consequently, stocks of distillate fuel increased by 1,698,000 barrels, and at the close of the week stood at 38,675,000 barrels or 687,000 barrels over a year ago. The gain in fuel oil stocks indicated the industry will be able to take care of the increase in heating oil consumption that should result this winter from lifting of rationing.

There was a corresponding gain in production of residual fuel oil, and stocks increased more sharply than in preceding weeks. Output of residual fuel oil was 500,000 barrels above the preceding week. Increased production resulted in an addition of 1,918,000 barrels to residual fuel oil stocks. However, in totaling 44,845,000 barrels, residual fuel oil stocks were still quite low, being 14 million barrels or 23.8 percent, beneath levels of a year ago.

Price Increases to Aid in Shipping Costs Are Cancelled

With the need to use railroad transportation no longer a factor in the East Coast supply situation, the Office of Price Administration announced August 20 that it would cancel on September 1 the increases in refinery and wholesale prices for gasoline, kerosine, distillate heating oils and diesel and heavy industrial fuels granted during the war to help defray higher costs of transportation.

The reductions will range from 0.6 to 1.2 cents a gallon on gasoline, 1 to 1½ cents a gallon on kerosine, distillate heating oils and diesel fuel, and from 15 to 30 cents a barrel for heavy industrial fuel oils. Later in the month, the reductions will be extended to retail prices in District 1.

Announcement that subsidy payments on transportation would be immediately curtailed and terminated at an early date was made by the Reconstruction Finance Corporation August 22, in line with the recommendation of PAW.

"These subsidy payments," the RFC explained, "were necessary to maintain petroleum and petroleum product ceiling prices along the Eastern Seaboard area which was normally supplied by tankers from the Gulf Coast states, and to assure the maximum production necessary for the war effort. Submarine sinkings and the requisitioning of all available tankers by the armed forces required the oil companies to transport petroleum and petroleum products to the East Coast by rail, barge and pipe line at substantially higher costs than if tankers had been available."

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 8
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,863	10–28	64,744	10– 7
1945	[1]4,944	7–14	[1]5,077	8– 4	224,079	6– 2	99,012	3–24	38,298	1– 6	56,074	1– 6
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 3
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–13
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–18	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–19	49,737	3–18
1945	4,678	1– 6	4,656	1– 6	215,382	8– 4	84,812	8– 4	26,483	3–17	38,548	5–26

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,380
January 29	4,400	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	23,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,018	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,430	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,531	15,194	89,121	4,667	29,184	9,670	38,548
June 2	4,859	4,804	224,079	15,317	88,696	4,857	29,819	9,437	39,022
June 9	4,853	4,827	221,552	15,256	87,896	4,842	30,339	9,382	38,996
June 16	4,888	4,915	221,932	15,132	87,504	5,342	30,397	9,252	39,482
June 23	4,898	5,002	220,974	15,367	87,462	5,014	31,761	9,558	39,893
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 7	4,886	[1]5,006	217,250	15,082	86,329	4,875	33,667	9,238	40,754
July 14	[1]4,944	4,945	[4]216,355	15,349	85,401	5,197	34,804	9,337	41,489
July 21	4,944	4,927	218,108	15,430	85,930	5,090	35,458	9,071	42,480
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 4	4,922	5,077	215,382	16,053	84,812	4,758	36,721	9,451	42,842
August 11	4,934	5,072	.....	15,547	86,307	5,082	36,977	[1]9,434	42,927
August 18, 1945	**4,934**	**5,140**	.....	**15,890**	**85,985**	[1]**5,344**	**38,675**	**9,934**	**44,845**
August 19, 1944	4,675	4,685	[5]223,040	13,913	79,908	4,657	39,520	8,876	58,862
Change:									
In week	.....	+68	.....	+343	−322	+262	+1,698	+500	+1,918
In year	+259	+455	.....	+1,977	+6,077	+687	−845	+1,058	−14,017
In year	+5.5%	+9.7%	.....	+14.2%	+7.6%	+14.8%	−2.1%	+11.9%	−23.8%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, August 11, 1944.

SIMPLICITY IS THE FIRST REQUISITE OF SAFETY

Look for the loads that aren't there!

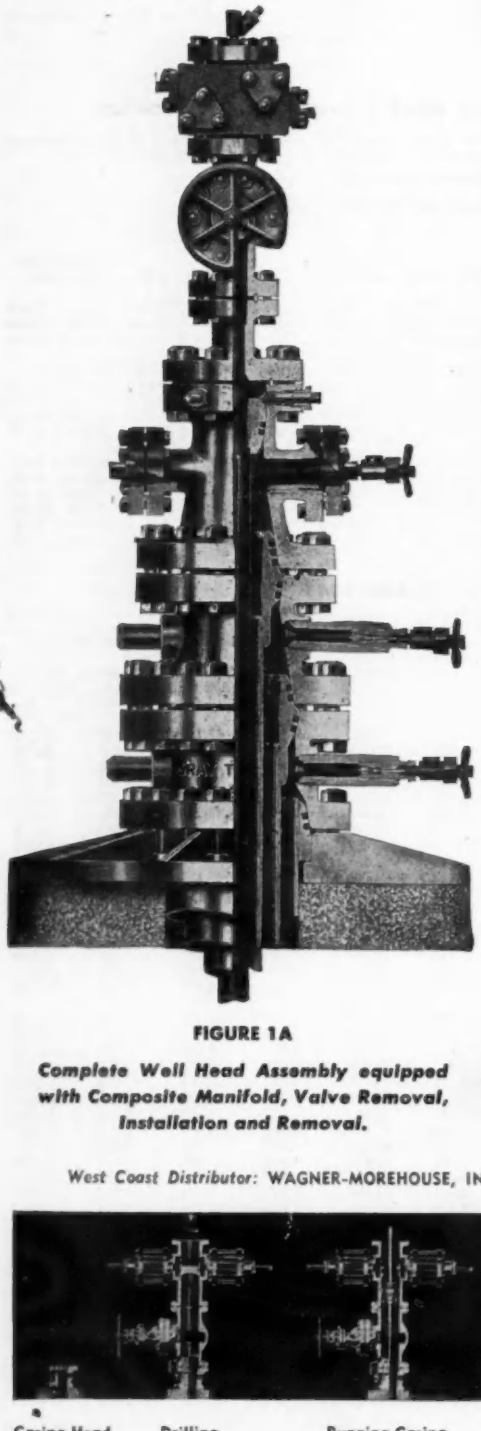


FIGURE 1A

Complete Well Head Assembly equipped with Composite Manifold, Valve Removal, Installation and Removal.

It's a miracle, instead of luck, when large pressure subject areas don't give trouble. In Well Control, as in hydraulics, minimizing pressure subject areas is a first requisite in the efficient control of pressures. Seals for controlling pressures from casing strings should be relatively the same area as that of the casing.

This is accomplished in Gray Systems of Well Control by moving the seal from the large casing head flange areas to smaller casing hanger areas. Casing hangers perform the multiple service of hanging casing and maintaining seals both from within and without the casing they support. Seals are obviously the most important element of a control structure, for the very purpose of a control structure is to captivate or seal that which it controls.

There are many advantages accruing from this reduction of pressure subject areas. Savings of materials is one, the decreased physical loading of materials gains more strength with less weight—flanges, bolts, valves and control accessories provide proportionately larger factors of safety. Structures are maintained large enough to permit essential operations, while at the same time control devices are small enough to maintain the proper ratio of balance with the casings upon which they are used. As depth increases, casing sizes are reduced to withstand pressures encountered; sizes of surface control equipment are likewise reduced, effecting a consistent balance of the whole.

When you reduce the diameter of the casing head pressure subject area, when you use drilling control equipment of like size with the casing, when tubing master valve is consistent in size with the tubing, flow from which it controls, you reduce the load or pounds of pressure exerted, in many cases as much as 50 per cent.

The whole is greater than any of its parts.
Look for the loads that aren't there.

THE WHOLE IS GREATER THAN ANY OF ITS PARTS

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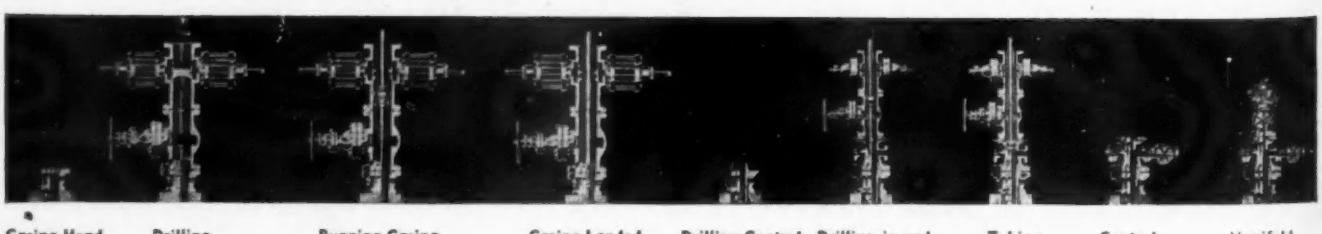

Casing Head Attached | Drilling | Running Casing | Casing Landed | Drilling Control Equipment Removed | Drilling-in and Running Tubing | Tubing Landed | Control Equipment Removed | Manifold Attached

Magnolia Awards Contracts To Recondition Texas Lines

Magnolia Pipe Line Company has awarded contract to the Oklahoma Contracting Company for the reconditioning of 21 miles of the Corsicana end of its East Texas field 12-inch outlet, which has been in service since July, 1931.

The line will be raised to surface and placed on skids for machine scrubbing and scaling. Pitted areas will be patch-welded, followed by application of a primer coat, dope and wrapped with fiber glass. Normal crude shipments will continue during this operation.

Magnolia has awarded contract to William Brothers Corporation for the reconditioning of an aggregate of 25 miles of its multiple system, consisting of three 8-inch and a 10-inch unit, between Brown station in Central Texas to its Beaumont terminal. This work will be confined to known "hot spots" along the route.

Construction Begins on Sivells Bend Field Outlet

Construction work is under way on the Sinclair Refining Company's recently authorized 14-mile, 6-inch pipe line outlet for the Sivells Bend multi-pay field, Cooke County sector of North Texas.

O. C. Whitaker Company was given contract to lay the discharge line, which will connect with the company's Healdton-Fort Worth 8-inch in South Oklahoma, and also the 3½ miles of 3, 4 and 6-inch gathering lines. The field station will be equipped to handle a maximum of 13,000 barrels daily.

Scurlock Buys 10-Mile Line Serving Adams Pool, Texas

Scurlock Pipe Line Company has purchased the American Mineral Spirits Company's 10-mile, 4-inch crude line serving the Adams pool, Webb County, and Munson area, McMullen County, Southwest Texas district.

The new owner will deliver its crude gatherings to Magnolia Pipe Line Company for transportation to the former's Corpus Christi terminal.

Pan American Completes Terminal at Port Isabel

Pan American Pipe Line Company has completed and placed into operation its pipe line terminal at Port Isabel, Cameron County, Texas. The construction included two 96,000-barrel tanks and terminal facilities for loading tankers. Tankers are now being loaded at the rate of about 5500 barrels an hour.

The new terminal is serving the Willamar field, Willacy County, with the oil transported from the field through Pan American's recently constructed pipe line.

Pipe Line Firm Formed

W. O. Holdren and O. A. Holdren, formerly with Deep Rock Oil Corporation, Tulsa, have organized the Holdren Construction Company with headquarters at Mount Vernon, Illinois, and will serve the Mid-Continent area in pipe line construction, trucking, excavating and other general oil field work.

W. O. Holdren was an official in Deep Rock's marketing division and recently resigned as deputy district director of the Tulsa-Oklahoma City office of OPA. O. A. Holdren served as production superintendent for Deep Rock.

No Confusion Expected as Tubular Controls Lifted

Two hundred ten individual controls over industry, including the restrictions of Schedule 9 to Conservation Order L-211, covering oil country tubular goods, were dropped by the War Production Board August 20.

Effective immediately, the order put he industry "on its own," but while it paved the way for a mad scramble to procure goods it is believed no great confusion will result. The mills will have a great additional tonnage of tubular goods available as a result of cancelation of orders for shells and bombs, which also will release equipment for production of more, and are expected to institute a rationing system of their own, if necessary, in the event orders pile up.

At the same time, WPB will maintain a watch over all industry to see that no establishments pile up unnecessarily large inventories, either to "get goods while the getting is good" or to keep it away from competitors. Instructions issued by Chairman J. A. Krug following the surrender of Japan called for definite control of inventory to prevent such hoarding.

WPB also will come to the relief of consumers who cannot get their fair share of the materials as they become available, by providing priorities assistance which will require a manufacturer to fill orders.

Explaining that the revocations were designed to make it easy for industry to help itself and to solve its problems without Government assistance, Krug warned that "the nation faces a remobilization of industry on a scale that matches the mobilization for war," adding that "we all have a tremendous stake in the speed with which this remobilization is accomplished."

132 Wooden Tank Barges Now Surplus Property

Half the 269 wooden tank barges built by U. S. Army Engineers for the Defense Plant Corporation during the war, for service on the inland waterways, have been hauled up and declared surplus by the Office of Defense Transportation.

The ODT will dispose of 132 of the barges, 88 of which were engaged in transporting Navy fuel oil from Texas refineries to Lynn Haven, Florida, over the Gulf Intracoastal Waterway for rail movement to the Craney Island Naval Base, Virginia, by rail.

Put into operation September 15, 1943, the barges moved 10,740,033 barrels of fuel oil before their war service was terminated.

PIPE LINES

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Consulting Engineer

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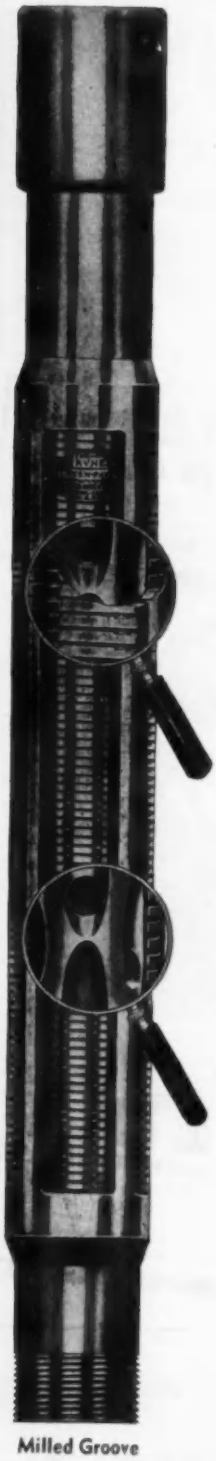

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☆ Oklahoma

Kiowa County Registers Production in Permian

New Permian production noted for Kiowa County; Matheson wildcat completed as small Bartlesville sand pumper; Continental's Butterly tests 250 barrels daily; Amerada prepares to retest Conrad gasser; Sunray opens small Layton sand pool in Pawnee County; Gulf taps gas-distillate pool in Marlow area.

Kiowa County: Fox & Fox's Campbell 1, NW SW SW 36-7n-14w, rank wildcat south of Carnegie on the northeast flank of the Wichita Mountains, has opened a shallow Permian sand area. On initial production test the discovery pumped 32 barrels of 24-gravity oil in 24 hours from 766-810 feet, total depth. Nearest production is in the Gotebo area about 12 miles west.

Cleveland County: After testing for more than six months, O. G. Harp's Matheson 1, NE NW NE 19-10n-2w, near the town of Moore, has been completed as a pumper. Final tests indicate the well will produce approximately 60 barrels daily. The well created considerable interest late last year when it flowed 1325 barrels in 24 hours and then bridged. Efforts to revive the test failed and it was drilled to 8770 feet, where it proved dry in the Wilcox. Plugged back and reperforated opposite the Bartlesville sand zone at 7670-7615 feet, the well pumped as high as 200 barrels daily before final completion.

Okfuskee County: While definitely opening a new gas area, Amerada Petroleum Corporation continued testing Conrad 1, SE NE NE 16-10n-10e, wildcat 2½ miles southeast of the Okemah area. The well flowed better than 10 million cubic feet of gas daily from Cromwell sand at 3291-3408 feet. At total depth of 4778 feet in the Wilcox sand which had no shows, the test was plugged back and operator plans to reperforate between 3290-3381 feet to test a section which showed considerable gas on drill-stem test.

Garvin County: Continued testing at Continental Oil Company's Butterly 1, NW SW SE 14-1n-1e, wildcat pool opener 2½ miles northeast of the old Butterly gas pool, shows appreciable increase in production. After swabbing at the rate of 40 barrels in 13 hours pumping unit was installed and the well was last reported making 250 barrels daily.

Pawnee County: Sunray Oil Corporation's Gilbert 1, NW SW NE 30-23n-3e, 1½ miles north of the Watchorn pool, has opened an area in the Osage Layton sand zone but with doubtful prospects for appreciable production. Shot with eight quarts at 2725-32 feet and after installing pumping unit the well gauged about 13 barrels of oil and 1 barrel of water per day. Location for Gilbert 2 has been staked in SE NW NW of the same section.

Stephens County: Gulf Oil Corporation's Briscoe Estate 1, CSE NW 36-2n-8w, which had been rocking along with little success, may open an important gas-distillate area 4½ miles southeast of Marlow. It was drilled to 8104 feet and after perforating unsuccessfully at 7900-24 feet it backed up and reperforated with 272 shots from 7732-7774 feet in basal Pennsylvanian. Upon showing porosity crew displaced drilling mud and the well cleaned itself, making an estimated 20 million cubic feet of gas daily plus 2½ barrels of high gravity distillate an hour. Shut in pressure was reported at 2985 pounds.

Pontotoc County: Continuing its string of successful wildcats, Ashland Oil & Refining Company appears to have opened a producing area 8½ miles northeast of Ada. Hales 1, NE NE NW 11-4n-7e, topped Gilcrease sand at 2056 feet with staining reported to 2065 feet. A drill-stem test at 2050-62 feet recovered 480 feet of live oil and 90 feet of oil-cut mud in 60 minutes, with no water. Seven-inch casing was set at 2051 feet and drilling in unit was being moved to location.

Oklahoma County: Phillips Petroleum Company's Airport 1, CNE NE 8-12n-4w, southwest extension to the West Edmond pool, flowed 546 barrels of 41-gravity oil daily through tubing choke following perforations at 7220-33 feet in the Hunton lime. It is reported showing a small amount of salt water. Operators staked Airport 2 in SE NE 8-12n-4w, and issued work orders for 3 more wells between the Airport 1 and the south end of the West Edmond pool.

☆ Kansas

Sedgwick Wildcat Swabs 181 Barrels of Oil Hourly

Wildcat near Wichita swabs 181 barrels daily; pool opened north of Hansen pool; Chalmette opens new pool in Ness County; wildcat southwest of Zook gets oil in Arbuckle.

Sedgwick County: British-American Oil Producing Company's Petrie 2, offsetting a dry hole, swabbed 181 barrels of oil daily from the Simpson Dolomite at 3090-95 feet to assure a new producing area 2 miles west of Wichita. Operator reports some salt water and the last 2 feet of the producing formation was

Wells Completed in the United States in Week Ended August 25, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	1	23	20
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	6
Arkansas	....	....	....	....	....	....	....	....	....	....	....	1	114	154
California	....	....	....	....	....	1	....	....	1	1	2	38	1,396	1,318
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	18	18
Florida	....	....	....	....	....	....	....	....	....	....	....	....	11	1
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	6	5
Illinois	33	1	....	8	42	1	1	....	9	10	53	46	1,169	1,213
Indiana	2	3	....	....	5	....	....	....	2	2	7	10	226	195
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Kansas	15	3	....	6	24	....	....	1	7	8	32	31	1,066	1,154
Kentucky	7	....	....	2	9	....	....	....	4	4	13	18	342	483
Louisiana	6	1	....	3	10	....	....	....	2	2	12	31	655	485
North Louisiana	1	1	....	2	4	....	....	....	2	2	6	18	243	164
South Louisiana	5	....	....	1	6	....	....	....	....	....	6	13	412	321
Michigan	5	2	....	5	12	....	4	....	10	14	26	....	496	424
Mississippi	....	....	....	....	....	....	3	....	5	8	8	10	251	117
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	30	24
Montana	....	....	....	....	....	....	....	....	....	....	....	....	132	226
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	3	11
New Mexico	3	....	1	4	....	....	....	....	2	2	6	10	284	267
New York	15	....	10	....	25	....	....	....	....	....	25	25	729	814
North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Ohio	....	....	....	....	....	....	....	....	....	....	....	12	555	604
Oklahoma	26	1	1	16	44	....	1	....	6	7	51	51	1,546	1,178
Pennsylvania	....	....	....	....	....	....	....	....	....	....	....	53	1,864	1,924
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	2	9
Texas	81	12	....	23	116	3	4	1	21	26	145	136	4,745	3,947
E. Tex. Bor. Co.'s	....	2	....	....	2	....	....	....	....	....	2	1	57	20
E. Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Rest of E. Texas	4	....	....	....	4	....	....	....	1	1	5	3	141	186
North Texas	20	....	....	10	30	1	1	....	8	9	40	39	1,132	914
W. Central Tex.	3	....	....	3	6	....	....	....	....	....	6	12	306	265
West Texas	30	1	....	....	31	2	1	....	1	2	35	26	1,181	1,035
Tex. Panhandle	2	6	....	1	9	....	....	....	....	....	9	11	395	172
G. Coast, Upper	5	1	....	2	8	....	1	1	4	6	14	8	457	365
G. Coast, Lower	13	1	....	4	18	....	1	....	4	5	23	20	685	624
Southwest Texas	4	1	....	3	8	....	....	....	3	3	11	14	328	294
S. Central Texas	....	....	....	....	....	....	....	....	....	....	....	2	63	69
Utah	....	....	....	....	....	....	....	....	....	....	....	....	....	1
West Virginia	....	....	....	....	....	....	....	....	....	....	....	16	511	587
Wyoming	....	....	....	....	....	....	....	....	....	....	....	....	95	110
Total U. S.	193	23	11	64	291	5	13	2	69	84	380	489	16,271	15,297

* Includes distillate wells. † Includes salt water disposal wells.

being plugged to get a water shutoff.

Ness County: After cracking plug at Bowman 1, NW NW NE 31-19s-25w. Chalmette Petroleum Corporation swabbed 25 barrels of oil an hour from Mississippi lime at 4553-55 feet. Looming as a pool opener last week when the hole filled with 800 feet of free oil on drill-stem test, the wildcat appears to have the earmarks of an important strike and considerable activity in lease and royalty buying is reported in the area between the discovery well and the Aldrich pool 6 miles north.

Phillips County: At the north end of the Kansas Uplift and 2½ miles north of the Hansen pool, Stanolind Oil & Gas Company has opened a new pool at Wiltrout 1, SW SW SW 35-4s-20w. Topping Arbuckle lime at 3386 feet, cores cut at 3386-88 and 3388-92 feet showed porosity and saturation. Drill-stem tests recovered oil-cut mud. Casing was being run for a production test.

Pawnee County: Six miles southwest of the Zook pool, J. M. Huber Corporation was building tanks at Katchelman 1, NW NW SW 34-22s-16w, new Arbuckle lime pool opener after the wildcat swabbed about 4 barrels of clean oil an hour from 4059-64 feet. Southwest of Zook, Skelly Oil Company was preparing to take state potential at Benson 1, NW NE NW 30-23s-15w. In preliminary tests the wildcat swabbed 9 barrels of oil an hour from Lansing lime at 3748-60 feet.

Butler County: Milt Isern abandoned Ashcraft 1, SW SW SE 14-26s-5e, wildcat south of Eldorado, after the hole filled with water while testing Mississippi lime at 2740 feet. Lansing was cut at 1826 feet; total depth was 2820 feet with no reported shows.

Missouri

Twelve miles southwest of Unionville, Dan McLaughlin's Johnson 1, NE NW NE 13-65n-21w, Putnam County, topped Mississippi lime at 622 feet and was drilling below 1047 feet. Subsurface control is furnished by a number of dry holes in Putnam, Sullivan and Mercer counties.

Atchison County: Dan Short's Rankin 1, SE SE SE 9-65n-40w, 2 miles west of Tarkio, was abandoned in water sand at 1384 feet, total depth. About 2 miles northeast of Phelps City, Claude McQueen was drilling below 1125 feet at Cleopfil 1, NW SW 30-65n-41w.

Cass County: Wilson et al's Edwards 1, SEC SW 17-46n-33w, near the Knoche and Belton areas, was abandoned at 889 feet with no shows reported.

Abandoned Well in Kansas Blows in As Gasser

An abandoned oil well 3½ miles east of Albert, Kansas, on the Henry Bahr farm, blew in as a gasser shortly after the casing was shot for salvage purposes and was out of control for about 60 hours. The well was estimated at more than 20 million cubic feet of gas daily but the strata from which it was producing could not be determined. Herb Karr, trouble shooter for the Kansas Corporation Commission who brought the well under control, said the gas was being analyzed and other tests made to determine the possibility of saving the well, which may open a new gas field east of the big Albert oil pool.

☆ New Mexico

Twin Drilling Starts in Penrose-Skelly Section

Twin drilling starts in the Penrose-Skelly area, Lea County, as sequel to Ellenburger strike; state's record depth test nearing 14,000 feet; southeast offset to Paddock field discovery finds water in the Glorietta.

Lea County: N. G. Penrose, Inc.'s Penrose-Federal 1, Ellenburger discovery for the Penrose-Skelly area, flowed 20 barrels of oil hourly on preliminary test after using 1000 gallons of acid through perforations at 8100-40 feet, then settled to 4 barrels hourly on extended gauge. This zone is due to be reacidized with 10,000 gallons. Additional perforations up the hole will follow as more effective pay was logged near the top of the Ellenburger, entered at 7950 feet with elevation of 3429 feet. The Ellenburger-Granite wash contact was called at 8202 feet, affording 252 feet of broken pay section without formation water.

Penrose, Inc. is starting a west offset that will be a twin to a 3700-foot Permian well, while Rowan Drilling Company's Elliott 3-B-9 also will seek Ellenburger production as a north offset to the latter and a twin location. Magnolia Petroleum Company will drill a twin test to the east of the discovery, while Humble Oil and Refining Company will offset the well to the south.

Phillips Petroleum Company's State-Lea-Tex 4, record depth test for the state near the Maljamar field, was drilling unidentified formation at 13,895 feet.

Paddock Field: Repollo Oil Company's Rodgers 2, southeast offset to the discovery, recovered salt water without oil or gas when tester was used at 5240-5300 feet. Seven-inch casing was cemented at 5289 feet to perforate opposite saturation in the upper section of the Glorietta.

☆ West Texas

Gaines Well Sets District Producing Depth Record

Northwestern Gaines County has flowing discovery in the Devonian for district producing depth record; Simpson strike in Crane County makes light flow; 7 deep tests under way in Crane County's indicated field.

Gaines County: Amerada Petroleum Corporation's Jones 1-A, 4¼ miles southwest of the Yoakum County sector of the Wasson field and 5⅓ miles north of a 12,222-foot Ellenburger failure, confirmed an important discovery in the Devonian, topped at 11,181 feet, in flowing oil and water below the main pay from perforations at 11,438-11,444 feet. Pipe was cemented at 11,629 feet, or 6 feet off bottom. A production test of the 6-foot perforations via testing tool with 5/8-inch bottom and 1-inch surface chokes yielded 369 barrels of fluid, averaging 18 percent basic sediment and water with gas-oil ratio of 360/1, on 21-hour test. A sample of the oil taken from top of the tank was 41-gravity. The oil is green in color and apparently of sweet quality. The volume of fluid was maintained the following 8 hours prior to killing the flow to squeeze and reperforate at 11,429-11,436 feet in an effort to locate top of the water table. Jones 1-A probably will include flowing production from the 9000-foot Basal Permian for a dual completion. Follow up completions in this area will cost approximately $250,000.

Andrews County: Magnolia Petroleum Company and Humble Oil & Refining Company's Cowden 1, shallowest Devonian strike for the county, flowed 146 barrels of oil on a 6-hour test through ½-inch choke, then flowed 72 barrels through 3/8-inch choke for the same period. This production followed a 1000-gallon acid treatment of perforations at 7900-60 feet in Devonian, topped at 7778 feet. Official gauge is pending. This strike is on 1 of 16 tracts held by the Pacific Western Oil Corporation that expire October 20, 1946. The checkerboard spread extends in all directions from the discovery. Magnolia et al are slated to start a minimum of 5 tests shortly on short-term leases obtained from Pacific Western.

Shell Oil Company and The Texas Company's Ratliff-Bedford 1, prospective 4-pay discovery, including an unusually thick Ellenburger pay, was making preliminary production test of perforations at 11,310-11,320 feet in Ellenburger, topped at 11,018 feet. Sinclair Prairie Oil Company's Bedford 1, 1-1/16 miles southeast, was drilling lime and shale at 8420 feet, while its Ratliff 1, 2 miles southeast of its 11,322-foot granite failure, was drilling lime and chert at 8774 feet, having entered the Mississippi at 8405 feet, or 199 feet high. Humble's Means 88-X, Means field and currently the district's deepest active test, was drilling dry lime at 13,155 feet.

Crane County: Magnolia Petroleum Company's Tucker 1-B, Waddell sand strike on the west side of the Sand Hills-Abell high, swabbed and flowed 25 barrels of oil on a 4-hour test, then after 7-hour pressure buildup, flowed 17½ barrels in 2½ hours through ½-inch. Production is from perforations at 5796-5806 feet in the Basal Simpson sand, topped at 5775 feet.

Midland County: Humble's Buchanan 1, 9 miles southeast of Midland, was making a production test of perforations at 12,490-12,540 feet in Ellenburger, topped at 12,170 feet. Previous perforations at 12,130-230 feet failed to yield oil or water after acidizing. This wildcat offers prospects of gas-distillate production in the Lower Permian near the 10,300-foot level.

Ector County: Sinclair Prairie Oil Company's Williamson 1, 2⅜ miles north by west of the TXL field's Ellenburger discovery, was running dip meter, which has proved successful in determining the direction of formation dip in other wells in the district. This wildcat entered the Ellenburger at 9865 feet, of 174 feet low to the deep discovery, but 106 feet high to the TXL field's Devonian discovery. A drill-stem test of Williamson 1 at 9881-9923 feet returned 4541 feet of salty-sulphur water slightly cut with gas and estimated 5 percent oil, and 3367 feet of salty-sulphur water. This showing and the relative structural position raises the possibility of it being in a narrow barren area between Devonian and Ellenburger production.

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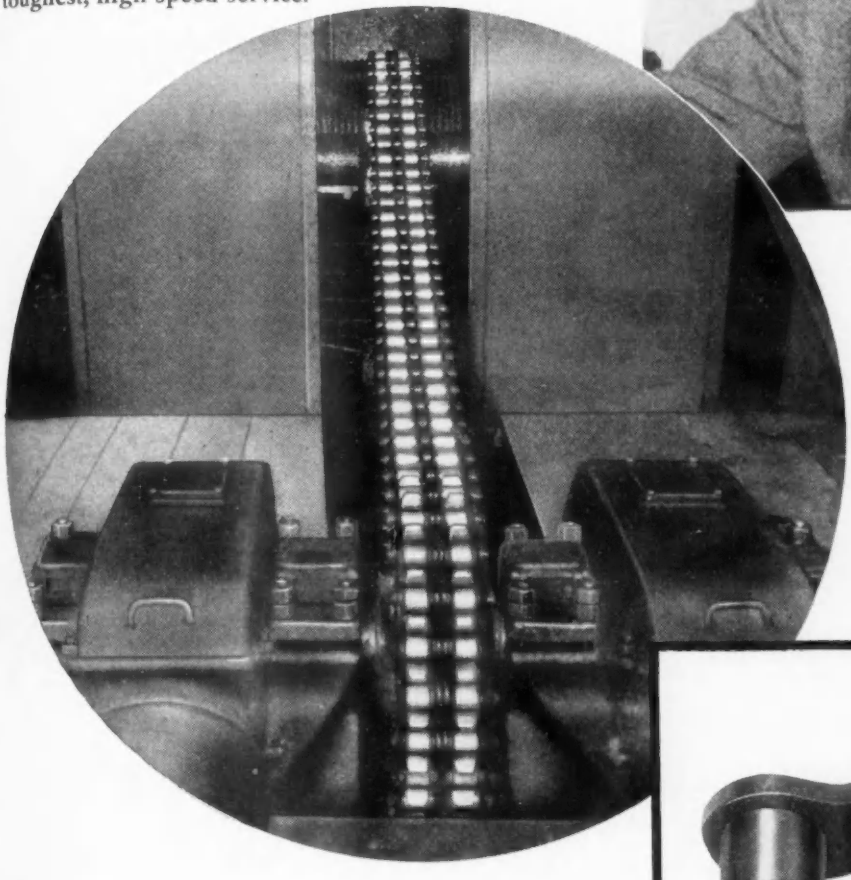

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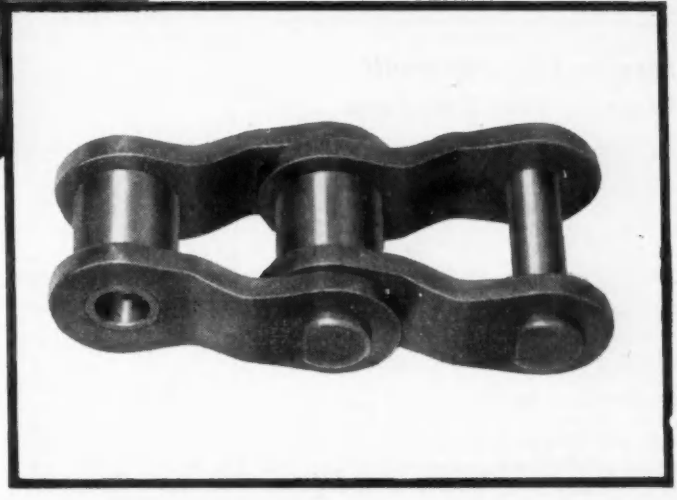

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Stanolind Oil & Gas Company's Scharbauer 3-Q, indicated Clear Fork discovery for the north end of the Goldsmith field, was drilling dry lime at 7360 feet, and its Cole 1, North Goldsmith area deep project, was drilling in San Andres at 4330 feet. Humble and Texas' Cummins 1, between the Goldsmith areas and a deep test, was squeezing off Yates sand gas after landing 9⅝-inch casing at 3717 feet. The Texas Company's Connell 29, 1½ miles west of the Penwell field, entered dry Glorietta at 4400 feet, and was drilling lime at 6680 feet.

Upton County: DeKalb Agricultural Association's Burleson 1, ½ mile northeast of McCamey and an Ellenburger test, was drilling lime and chert at 7010 feet in Devonian, topped at 6324 feet, or 43 feet low to the McCamey field's Silurian discovery.

Cochran County: Texas Gulf Producing Company's Slaughter 1, Potter County School League 113, and 3 miles west by north of the Dean field, was awaiting pump test after swabbing 8 to 10 barrels of pipe line oil hourly. It was acidized with 2000 gallons in San Andres at 5020-63 feet, and is classed as an extension.

Yoakum County: Gulf Oil Corporation's Frost 1, C NW NW Sect. 35 and 3½ miles east by south of a recent oil strike near the side line of Cochran County, was eliminated as a San Andres prospect in reaching water without commercial production at 5209 feet. Top of San Andres, called at 4410 feet, is 135 feet low. Possibly a substantial portion of the intermediate acreage will be productive. Hunt Oil Company's Graham 1, C NW NW Sect. 328 and 5 miles northwest of the Ownby field, was cleaning out after a nitro shot at 5310-35 feet, having plugged back from water at 5350 feet in San Andres, topped at 4590 feet.

☆ Texas Panhandle

Sherman Test Apparently Misses Permian Gas Zone

Phillips Petroleum Company's Smith-Shirk 1, west Central Sherman County wildcat, will be plugged back from 7014 feet to about 5850 feet to set 5½-inch pipe and test porous zone near the 5800-foot level. This Ordovician project apparently missed the regular Permian gas zone.

Wheeler County: Sinclair Prairie Oil Company's Henderson 1, Ellenburger wildcat, was drilling dry granite-wash at 4412 feet.

Dallam County: The Texas Company's Capitol Freehold Land Trust 1, 9 miles south of Texline and near the New Mexico border, was unloading 5½-inch pipe cemented in granite at 6167 feet to perforate opposite porous zone in the Ellenburger.

Senators to Hold Hearings On Federal Leasing Act

The Senate Investigating Committee on Petroleum resources will hold public hearings in Casper, Wyoming, and Denver, Colorado, on proposed changes in the Federal Oil and Gas Leasing Act of 1920. Wyoming and Montana operators will be heard in Casper, August 27-28.

☆ North Texas

Multiple Pay Assured for Wilbarger County Pool

Multiple oil pay assured for Wilbarger County's East Harrold pool; 2 wildcats between Hull-Silk and Browning areas pass up oil showings.

Archer County: Manning & Brown, Inc.'s, Mahler, 1 mile east of the north end of the Hull-Silk field, was drilling shale at 4750 feet to explore the Ellenburger after developing promising shows in the Strawn. A drill-stem test at 4250-63 feet yielded 120 feet of oil-cut mud, while a test at 4248-87 feet returned 260 feet of oil and gas-cut mud.

Jack County: Continental Oil Company's Ramzy 1, Sec. 4, D. K. Davis survey and 3⅓ miles northeast of the Cherry Holmes field, is credited with showing oil saturation in Strawn sand at 4260 feet. Hanlon & Buchanan, Inc.'s, Whitsett 1, Lot 2, Sec. 2, BBB&C Ry. survey and 2 miles northeast of the Hoefle field, recemented pipe to retest oil saturation at 5171-81 feet in Bend.

Wilbarger County: National Associated Petroleum Company's Havens 1, west offset to its Ellenburger discovery in the East Harrold area, confirmed a shallower pay in recovering 1325 feet of free oil with gas to surface within 7 minutes when tester was used at 3170-80 feet in Canyon, topped at 3161 feet. A second drill-stem test of saturated Canyon lime at 3254-70 feet yielded 50 feet of oil-cut mud, and the test was drilling lime to 3660 feet. The company's Kelly 1-B, northwest offset to its discovery, ran electric logging survey after testing slightly oil-cut drilling fluid at 3659-82 feet in Canyon, topped at 3163 feet, or 17 feet low. A previous drill-stem test at 3261-76 feet yielded 190 feet of gas-cut mud. Drilling is under way on a north offset to the discovery.

Cooke County: Fred Snuggs et al's Almon-Sun 1, discovery 2½ miles east by north of Gainesville and 2 miles north of the Anderson-Kerr pool, pumped 122 barrels the first 24 hours and 86 barrels the second from Strawn sand at 2898-2907 feet. This new area is due to get substantial development with Magnolia Petroleum Company and Shell Oil Company participating.

☆ East Texas

Red River County Wildcat Has Smackover Porosity

Red River County wildcat has nominal porosity in Smackover; Cherokee County prospect flows gas and water from Rodessa perforations; Travis Peak is barren in Navarro County wildcat.

Red River County: Tex Harvey Oil Company's York 1, Christian Groce survey and 1 mile southwest of Lydia, encountered Smackover porosity at 7870 feet with nominal evidence of oil the following 15 feet. The test was drilling shale and lime at 8005 feet.

Cherokee County: Humble Oil & Refining Company's Maness 1, 3 miles south of Circle, flowed salt water and gas from Rodessa perforations at 7848-54 feet through 1/16-inch choke.

Tom G. Shaw et al's Bolton-Pure 1, prospective discovery for the Summerfield faulted area, was attempting to squeeze and reperforate after showing for an oil, gas and water well in Woodbine at 4171-77 feet.

Navarro County: J. L. Collins & Company's Greenlee 1, 3 miles east of Eureka, was drilling barren sandy-shale at 7305 feet in Travis Peak topped at 6990 feet. A drill-stem test at 6900-49 feet in Pettit entered at 6843 feet yielded 120 feet of gas-cut mud with a trace of free oil.

Smackover Projects: Northern Ordnance, Inc.'s, Lumpkin 1, Bowie County, was drilling sandy-shale at 6299 feet in the Chapel Hill field. Sinclair Prairie Oil Company's Shofner 1 was drilling shale at 11,790 feet.

☆ East Texas Border

Two Wildcats in Harrison County Become Producers

Two Harrison County wildcats make production; San Augustine wildcat has show of gas.

Harrison County: Rogers Lacy's J. R. Tutle 1, J. M. Clifton survey, 3 miles north of Marshall, reperforated in the Pettit, acidized with 4000 gallons of acid and after cleaning itself, began flowing 2 to 3 million cubic feet of gas and making an unestimated amount of approximately 50-gravity oil through ¼-inch choke on tubing. Testing continues to decide commercial worth of the well, and whether it will be completed as a gas-distillate producer.

Lacy's Mrs. E. L. Poteet 1, Betty Humphries survey, 4 miles north of Harleton, after perforating opposite the Rodessa from 6830-42 feet with 45 shots, flowed an estimated 100 million cubic feet of gas per day, open. Previously, the well flowed 15 million cubic feet of gas daily from perforations in the Travis Peak, topped at 7358 feet. Plans are to dually complete the well, which is bottomed at 7500 feet, with 5½-inch casing cemented at that depth.

Lacy's Quinn 1, Vashti Gibbs survey, is drilling below 6345 feet in shale and anhydrite.

Stanolind Oil & Gas Company is moving in material for a new wildcat, Cole 1, Charles Taylor survey, in the Rosborough Springs area, 9 miles south of Marshall, which will start soon as a Travis Peak test.

San Augustine County: M. E. Davis, on a 5-minute drill-stem test of C. Thomas 1, W. B. Horn survey, recovered 4 feet of gas-cut mud and 2000 feet of water cushion. Drilling continues below 8930 feet in Travis Peak, topped at 8815 feet.

Shelby County: M. E. Davis' Pickering Lumber Company 1, W. J. Brittain survey, has cemented 7-inch casing at 6688 feet, and is preparing to test. Total depth is 7500 feet.

Humble Oil & Refining Company's Pickering Lumber Company 1, deep wildcat in St. Francois survey, is drilling below 10,125 feet in sand and shale in the Cotton Valley with no showings of oil or gas.

Nacogdoches County: Magnolia Petroleum Company's W. L. Harrell 1, William Wray survey, is drilling below 5814 feet in lime. A 30-minute drill-stem test at 4360-70 feet, using ¼-inch chokes,

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recovered 1480 feet of salt water, 500 feet of gas-cut mud.

Marion County: Jefferson Oil & Gasoline Company is still testing the wildcat J. M. Deware, Jr., et al 1, in Reuben Bennington survey, which is at total depth of 7500 feet. A drill-stem test through 45 perforations from 6650-60 feet gauged 41 barrels of 44-gravity oil per hour, tubing pressure 2000 pounds, casing pressure 2250 pounds, gas-oil ratio 19,500/1.

Stewart's Company's Brown Estate 1, Joseph Watkins survey, is drilling below 5875 feet in shale and anhydrite.

Panola County: Two wildcats have reported gas indications. Lucas & Cullins' G. T. Hudman 1, Elizabeth White survey, cored from 6345-62 feet and recovered 4 feet of sandy lime with slight odor of gas. It is now coring below 6380 feet.

☆ South Central Texas

Dimmitt County Discovery Reworked to Hike Gas Output

Gas discovery well in Dimmit County is being reworked; shallow tests located in Bastrop and Milam counties; tests active in Kerr County.

Dimmit County: Calatexia Oil Company's S. E. McKnight, wildcat gas discovery well 4 miles southwest of Carrizo Springs, is being reworked in an effort to increase the volume. New perforations have been made at 2638-40 feet. Previously, the well flowed an estimated 500,000 cubic feet of gas daily through a ¼-inch choke from perforations at 2640-45 feet.

Bastrop County: A 2000-foot wildcat test has been staked 5 miles southwest of Cedar Creek by G. A. Gamble of Dallas. It is the Charles Wolf 1 in the James Doyle survey.

North of Cistern, Continental Oil Company's Willie Malina 1 was drilling below 6685 feet in shale.

Milam County: For the first time in several months drilling activity is to be revived in this county. A 1200-foot wildcat test has been staked by Glenn & Harding 7 miles north of Minerva. It is the J. S. Jacobs 1 in the Jose Leal survey.

Kerr County: The Ohio Oil Company's Charles O. Robinson 1 wildcat, was drilling below 4287 feet in sandy shale.

Phillips Petroleum Company's Whitworth 1, deep test southwest of Kerrville, was drilling in hard formation at 6500 feet.

☆ Southwest Texas

Test Made in Duval County Prospective Pool Opener

A drill-stem test being made on Duval County prospective pool opener; Sunray stakes deep test in McMullen County; shallow wildcats staked in Duval and Jim Hogg counties.

Duval County: Attempts are being made to open a new producing area 13 miles west of Benavides at Cox & Hamon's Clara Driscoll 4. The well topped a sand at 3168 feet and operators are attempting a drill-stem test at 3168-80 feet.

Parker & McCune of San Antonio have staked a 4700-foot wildcat 7 miles northeast of Hebbronville as Central Securities Company 1, Diego Hinojosa Grant.

McMullen County: Sunray Oil Corporation entered the county play for deep production by staking J. A. Bracker 1, about 3 miles southeast of Tilden in the James Jean survey. Projected depth is 6500 feet.

Harry Ezzell, Agent, has completed a new oiler in the Ezzell field. The Harry Ezzell 47 pumped 21 barrels of 19.7-gravity oil daily from 1490-1501 feet.

Jim Hogg County: M. L. Massingill of San Antonio is preparing to drill E. Rodriquez 1, wildcat 2 miles west of Cuevitas. Proposed depth is 3200 feet.

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☆ Lower Texas Coast

Gas Field Is Opened in Brooks County by Humble

Humble opens gas field in Brooks County; Sterling completes outpost in Hope pool; Le Sal Vieja pool extension logs sand; second oiler completed in Moody Branch field.

Brooks County: Humble Oil & Refining Company has opened a new gas and condensate pool 1 mile northwest of Rachal with completion of B. A. Skipper Jr. 1. On an open flow test from 6100-12 feet, the well made 6,500,000 cubic feet of gas daily along with an unestimated amount of 63.2-gravity condensate. Total depth is 7925 feet with 7-inch casing set at 6526 feet.

Lavaca County: Sterling Oil & Refining Corporation has extended the Hope field about 1 mile south following completion of R. H. Goodrich 1, J. J. Poindexter survey. The outpost flowed 60 barrels of condensate daily through a ⅛-inch choke from perforations at 8890-8950 feet. Tubing pressure was 1850 pounds and casing pressure 2250 pounds. The Goodrich B-1 was shut down for orders at 9021 feet.

Sterling's John Muhlstein Sr. et al 1, wildcat test 11 miles northeast of Halletsville, was drilling below 3818 feet in sandy shale. This test is credited with picking up a slight show of oil and gas in the Cockfield around 2800 feet.

Willacy County: Magnolia Petroleum Company and J. S. Abercrombie Company's Harvey Geis 1, about 1 mile north of the operators' H. H. Dohe 1, discovery well in the La Sal Vieja pool, is drilling below 9692 feet in shale. This outpost test is credited with running slightly higher than the discovery and has picked up gas and condensate sands below 8500 feet. The Dohe 1 is being completed through perforations at 10,000-040 feet. Final gauge has not been made.

Jackson County: A second producer has been completed in the recently opened Moody Branch field. Crown Central Petroleum Corporation's W. L. Moody Jr. 2, about 1320 feet southeast of the discovery well, has been completed through perforations at 8512-16 feet for 64 barrels of condensate daily through a 3/16-inch choke. Tubing pressure was 1150 pounds. The gas-oil ratio was 9900 to 1. The Moody 1 discovery well was completed through perforations at 8832-40 feet.

Karnes County: Southern Minerals Corporation has completed L. A. Faires 2, Falls City field, for 125 barrels of 48.4-gravity oil daily through a 9/64-inch choke from 4645-56 feet. Tubing pressure was 160 pounds.

Goliad County: W. C. McBride, Inc.'s August Kenne 1, wildcat 6 miles west of Weesache in the J. W. Bergen survey, is squeezing perforations at 7612-26 feet after the well flowed oil and wash water. Pressures rose to about 1800 pounds during the initial test.

Washington Test

A deep test of the Aberdeen area, Grays Harbor County, Washington, will be spudded shortly by Sharples Corporation.

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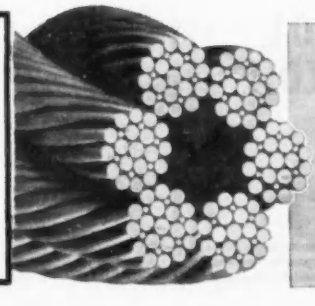

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Production Is Opened on Boling Dome North Flank

Oil production opened on north flank of Boling dome; new Wilcox sand pool opened in Colorado County; outpost finaled in High Island pool; Pinehurst field extension sets casing; Hamman outpost flows salt water.

Wharton County: Oil production has been opened on the north flank of the Boling dome with completion of Union Oil Company of California's E. Hawes and Lizzie M. R. Hawes, John Huff League. Perforated at 4550-70 feet, the well flowed 118 barrels of 25.9-gravity oil daily through a 5/32-inch choke. Tubing pressure was 350 pounds and casing pressure 310 pounds. Total depth was 4690 feet with 5½-inch casing set at 4645 feet.

Operator has located Hawes 2 as a south offset to the new producer.

Humble Oil & Refining Company has completed Reitz et al 1, about 1 mile north of the Daboval field, for 41 barrels of 61-gravity condensate daily through a ¼-inch choke from 6775 feet. The gas volume was 3,640,000 cubic feet daily. Tubing pressure was 2460 pounds and casing pressure 2550 pounds. Operator now is drilling Willis 1 about ¾ mile north of the outpost producer.

Montgomery County: Pan American Production Company's J. M. Winslow 1, Edwin Allard survey, about 1 mile northeast of production in the Pinehurst field, has landed casing on bottom at 11,145 feet.

Colorado County: Skelly Oil Company and Warren Petroleum Company have opened a new Wilcox sand pool 9 miles southwest of Columbus with completion of R. Hamel 1, R. Dowdy survey. On a 12-hour gauge the well flowed 80.67 barrels of 47.3-gravity oil through ⅜-inch bottom and 3/16-inch top chokes from perforations at 9052-69 feet. Tubing pressure was 1800 to 2000 pounds, with the gas-oil ratio 7029/1. At a 24-hour rate, the gas volume was 1,134,000 cubic feet. Total depth is 9706 feet with 5½-inch casing set at 9580 feet.

Galveston County: Production has been opened on the southwest side of the High Island field at John W. Mecom of Houston E. K. Cade et al 1. The test bottoms in salt water sand at 6671 feet and operator made a squeeze job at 6354-70 feet before perforating for final completion at 6354-64 feet. On a 24-hour gauge the well flowed 356 barrels of 34.1-gravity oil through a ¼-inch choke. Tubing pressure was 450 pounds, casing pressure 950 pounds, with the gas-oil ratio being 350/1. Operator has requested a new field allowable and the Texas Railroad Commission has set a hearing for September 14.

Chambers County: Butcher-Arthur, Inc.'s First National Bank of Goose Creek 1, wildcat in the Cedar Bayou area, is still testing through perforations at 7180-84 feet with no additional information released.

Harris County: Magnolia Petroleum Company's Warren Ranch 3, new test on the southwest side of the old Hockley dome where oil production was opened recently, is drilling below conductor pipe.

Matagorda County: Union Oil Company of California's Elsie Richers 1, on the southeast flank of the Hamman field, is squeezing perforations at 10,798-899 feet for a squeeze job. A drill-stem test through ⅛-inch top and ¼-inch bottom chokes flowed 100 percent salt water with a slight trace of oil and gas. The flowing pressure was 1700 pounds. This test bottoms at 10,927 feet with 5½-inch casing set at 10,899 feet.

Newton County: Humble's W. W. Moore 1, Stark survey, 13,000-foot wildcat test, has run an electrical log at 8561 feet.

Austin County: Dual sand completion is being made on Sinclair Prairie Oil Company's W. A. Schweke A-1, Wilcox sand discovery well 2 miles southeast of New Ulm. Operator will complete in sands at 9240-50 feet where the well flowed 120 barrels of 54-gravity condensate daily through a ¼-inch choke and at 9155-56 feet where initial test flowed 90 barrels of 35-gravity oil daily.

☆ South Louisiana

Testing Under Way in Egan Outpost, Acadia Parish

Testing operations under way at Egan outpost; completions decline in South Louisiana; casing is cemented in Hayes wildcat; deep Allen Parish wildcat holds interest.

Acadia Parish: Testing operations are under way at Sun Oil Company and Sohio Oil Company's A. R. M. Company 1, 39-9s-1w, outpost well in the Egan field. Drilled to 10,810 feet, operators set 7-inch casing on bottom and have perforated in the Hayes sand at 10,775-779 feet. The well is cleaning into pits through a 9/64-inch choke without a gauge. Tubing pressure is 150 pounds.

In the same area, Irwin-Hudson's Houssiere-Latreille 1-B is being completed after setting 7-inch casing at 10,612 feet.

Iberville Parish: Noble & Baker's W. E. Caldwell 1, 52-9s-2e, discovery well in the South St. Gabriel field, is continuing to retest after reperforating at 9210-14 feet. Operators are attempting to shut off water which broke into the flow in original perforations at 9191-9211 feet.

Jeff Davis Parish: Gulf Refining Company's Lacassine 1-A, 19-11s-5w, wildcat on the Hayes dome, bottoms at 11,430 feet and has 7-inch casing cemented at 10,650 feet.

Beauregard Parish: Houston Oil Company of Texas' Fee 1, Mystic field, is drilling below 7890 feet in shale after a 20-minute drill stem test at 7602-36 feet recovered the 2800-foot water cushion with a flowing pressure of 3400 pounds.

Magnolia Petroleum Company's Lutcher-Moore 1-D, wildcat test in 34-5s-12w, was drilling in sand and shale below 11,770 feet.

In the Oretta field, Magnolia's Homer Tate 1 has been completed for 130 barrels of 46.4-gravity oil daily through a 7/64-inch choke from perforations at 8692½-94½ feet.

St. James Parish: Humble Oil & Refining Company's Louis Brady 1, Hester field, flowed 145 barrels of 48.6-gravity condensate daily through a ¼-inch choke from 9851 feet.

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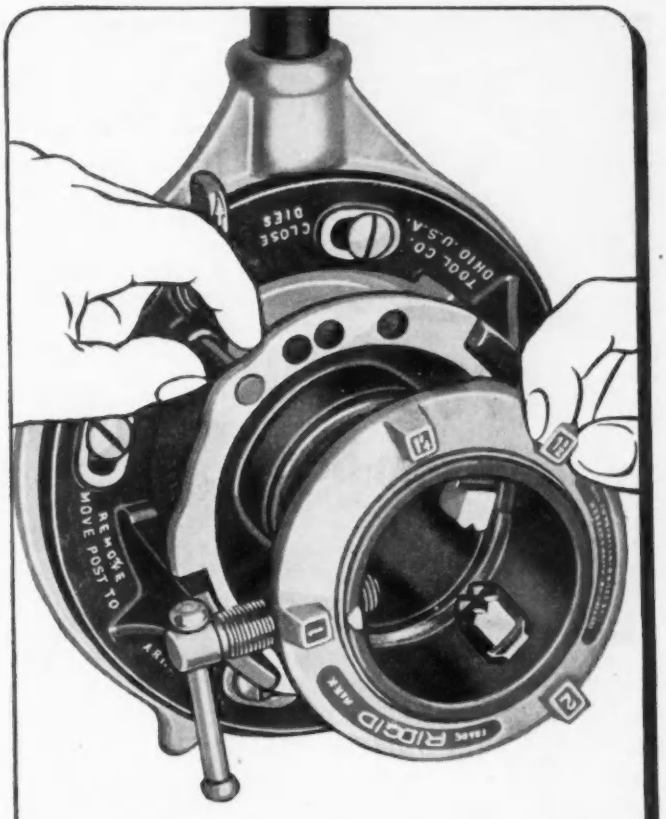

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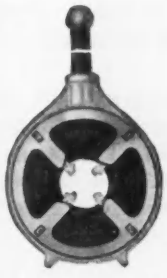

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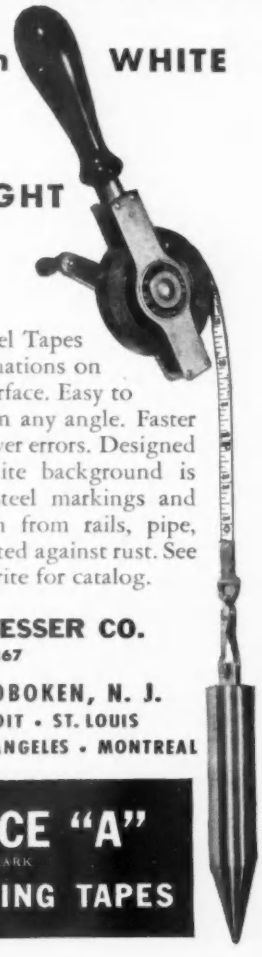

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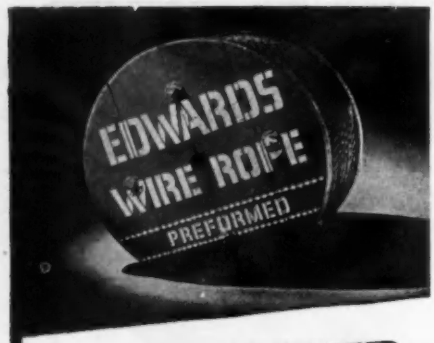

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☆ North Louisiana

Promising Shows Recorded By Several State Wildcats

Several wildcats have recorded promising shows, preparing to test; 2-mile extension test for Vixen area planned.

Richland Parish: Roy Fisher et al's Spruel 1, 4-16n-8e, 1 mile south and ¼ mile west of the Big Creek field discovery, ran 5½-inch casing at total depth of 3237 feet, and is swabbing to test the Tuscaloosa sand, in which production possibility has been indicated from 2989-3006 feet. A drill-stem test of that interval recovered oil-cut mud with no showing of salt water. A core, believed to be in the Paluxy, from 3203-10 feet recovered 5 feet of gray sand with salty taste, but has not been tested.

R. J. Caraway's Bryant 1, C SE NW 35-17n-9e, equi-distant between the Delhi and Big Creek fields, is drilling below 1100 feet in shale.

Kemp & Caraway's Roy Snyder 1, C SW NE 24-17n-9e, outpost 1½ miles east and ¼ mile north of Delhi, is reported to have a good chance at production and will again increase interest in the area. The well is said to have logged 30 feet of oil sand, but figures of the sand interval are not reported.

H. W. Todd et al's Greer Estate 1, NE SW 13-16n-7e, another wildcat, is waiting on cement at 1730 feet in shale.

Lincoln Parish: Drilling continues in California Company's Nobles 1, 12-19n-4w, prospective gas-condensate discovery in the Hico area, which is now below 9320 feet on its way to contract depth of 10,500 feet. California is said to be planning another test in the area, either in the west half of Sect. 28 or the east half of Sect. 29, northeast of the prospective pool opener.

Ouachita Parish: California also is drilling below 7963 feet in Maxey 1, 32-18n-1e, another wildcat which has had good shows farther up the hole.

Claiborne Parish: H. C. Owens' Thomas Crichton 1, 1-20n-8w, has reported a slight odor of gas from core taken at 5309-15 feet. The well is south of production in the Homer field.

Hunt Oil Company's W. T. Owens 1, 15-23n-7w, tested 100,000 cubic feet of gas and salt water from perforations at 4125-36 and 4140-50 feet. Operators have squeezed and are preparing to perforate up the hole.

De Soto Parish: Grady H. Vaughn's wildcat, McGrew 1, C SW SW 34-16n-14w, Keithville area, cored from 8960-65 feet and recovered 3 feet of sand with gas odor but little porosity. The well, now in the Cotton Valley series below 9058 feet in shale and lime without shows, will be taken to 9200 feet, contract depth.

Caldwell Parish: The Atlantic Refining Company will attempt to extend production in the Vixen field 2 miles northeast in Louisiana Central Oil & Gas Company D-1, C NE SW 20-15n-3e, proposed 10,000-foot test.

Shell Oil Company's Louisiana Central Oil & Gas Company 2, second test in the field, is drilling below 7019 feet in sand with no showing.

Bienville Parish: Arkansas Fuel Oil Company's Woodward-Walker 1, 32-17n-7w, third test in the Sailes area, is trying to resqueeze perforations from 6750-74 feet and shut off flow of gas. Total depth is 6871 feet. The test has not indicated production comparable to that of the discovery well.

Franklin Parish: C. L. Smith's McGehee 1, C SW SW 16-11n-9e, is a new Tuscaloosa wildcat.

Jackson Parish: Shell Oil Company's Tremont Lumber Company 2, second test in the Chatham field, 23-15n-1w, is drilling in shale and lime below 6966 feet.

Sabine Parish: Lensgraf & Pyle are drilling below 2575 feet in Long Bell Petroleum 1, C SE NE NE 5-8n-13w, old shallow producer in the Zwolle field, which is being deepened to 4700 feet in search of Glen Rose production.

Madison Parish: Sohio Petroleum Company's wildcat W. L. Etheridge 1, 3-14n-12e, is drilling below 1090 feet in shale.

Oklahoma Committee Named

Dean McGee, vice president of the Kerlyn Oil Company, Oklahoma City, and chairman of a special industry committee which is preparing data for a Federal Power Commission hearing next month, has appointed the following committee members: Frank Porter, Fain-Porter Drilling Company, Oklahoma City; Don Emery, Phillips Petroleum Company, Bartlesville; Joseph Bowes, Oklahoma Natural Gas Company, Tulsa; J. R. McWilliams, The Carter Oil Company, Tulsa; W. A. Delaney, Louisiana-Nevada Transit Company, Ada; W. P. Z. German, Skelly Oil Company, Tulsa, and J. A. LaFortune, Warren Petroleum Corporation, Tulsa.

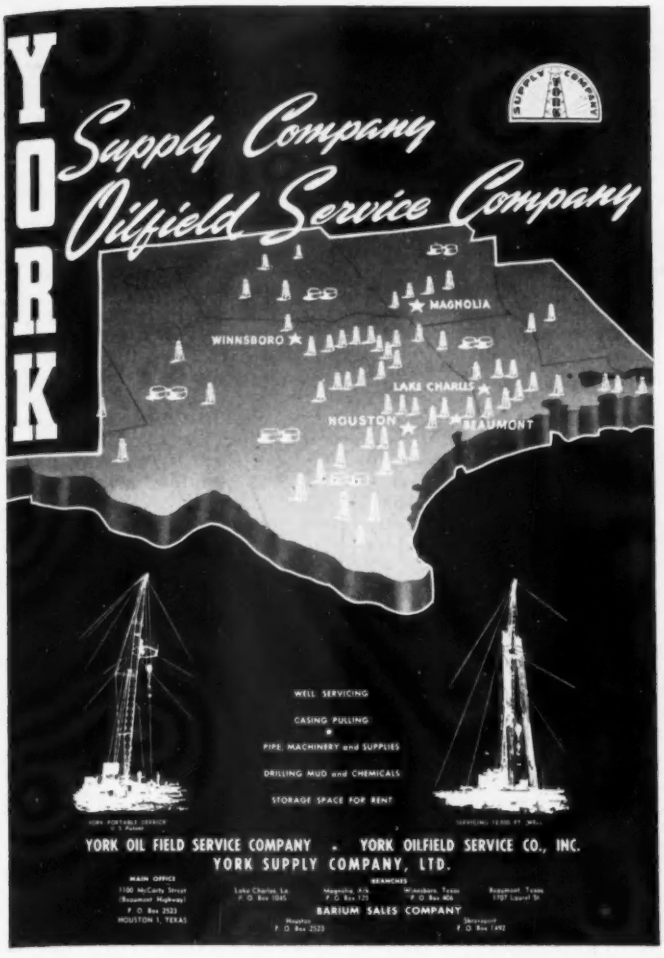
Subcommittees are being selected to assist in compiling material for presentation on behalf of Oklahoma on the following subjects: Reserves; Practices and Problems as Related to Production for Interstate Commerce; Extent and Control of Physical Waste; State Laws Governing Production, Waste and Conservation; Interstate Pipe Lines; Utilization of Natural Gas and Potentialities of Synthetic Production.

☆ Mississippi

Jefferson County Given New Field by Humble Well

Humble well assures new field in Jefferson County; good Lincoln County prospect running casing after getting encouraging shows; Baxterville field extended into Marion County.

Jefferson County: Humble Oil & Refining Company's M. R. Smith 1, SEc 12-9n-1e, has been announced as a definite commercial producer. The well represents the first new discovery for Mississippi since the completion of Humble's Evans 1, and Gulf Refining Company's Edwards-Bailey 1 in March. The Humble well produced at the rate of 217 barrels per day on its most recent test. Gravity of the oil was 37.4 and gas pressure was good. The well was drilled to 11,299 feet and plugged back to the 9700-foot zone of the Massive sand where a 30-foot section of good oil sand had been encountered. The Smith 1 is about 5 miles north of Fayette. Tests will contniue in an effort to increase production and develop new productive levels, although no encouraging shows have been reported from the lower horizons in recent weeks. In the same area Gulf Refining Company's Ella M. Cato 2, NWc NE 30-8n-4e, Tuscaloosa pros-



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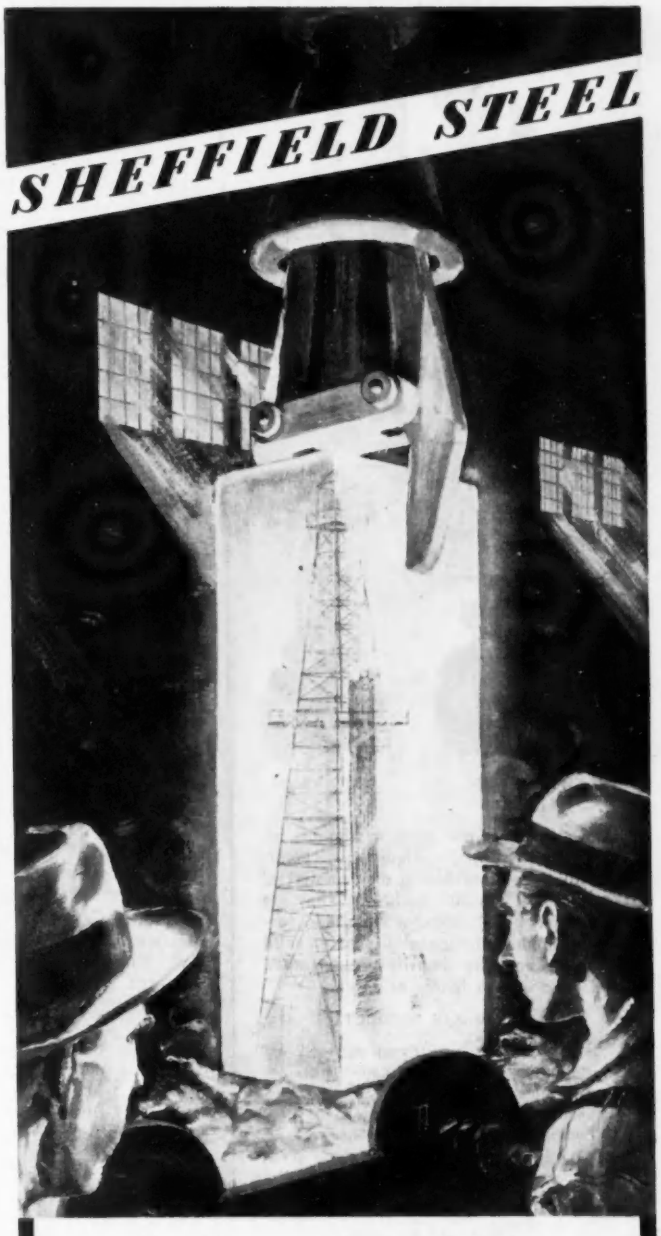

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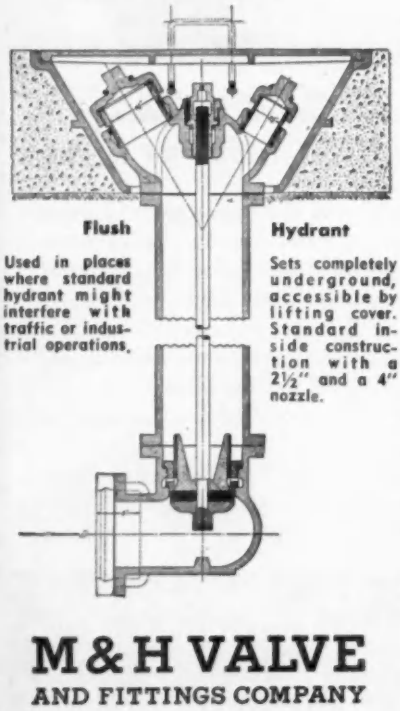

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pect, has reported no shows during the past week and is drilling below 5200 feet. Humble's Wash Gaines 1, SE 16-9n-1e, wildcat, is also getting under way.

Lincoln County: Roesser & Pendleton's W. L. Case 1, SEc 8-7n-7e, south of the discovery well in the old Brookhaven field is reported running casing after developing good indications of commercial production. The Massive sand zone has shown considerable faulting, and there is a good chance the well will not only produce a high quality oil, but that it might develop a new horizon for the area. It was previously reported that several feet of saturated sand was revealed from cores at 10,256-66 feet.

Marion County: The Texas Company's L. V. Ladner 1, SEc NE 12-1n-17w, has been dually completed to extend the Baxterville field well across the Lamar County line. Production is from 144 perforations between 8756-80 feet in the Massive sand zone. On initial completion test the well flowed 303 barrels of 16.4-gravity oil daily through 3/16-inch tubing choke. Gas production is from perforations between 7880-98 feet in the Tuscaloosa with an initial flow of 1,990,000 cubic feet of gas and about 7.5 barrels of condensate per day. Humble's A. E. Ball 1, NWc 20-2n-14e, Hub field, was waiting on cement after running casing to 9302 feet. Cores taken since last week continue to reveal good porosity, although considerable salt water has been encountered between 9131 and 9180 feet. Gulf's E. H. Bradshaw 5, NEc 28-3n-17w, wildcat, is drilling below 6160 feet with no shows reported. Eutaw zone was topped at 5672 feet.

Yazoo County: Union Producing Company's Jennie Stevens 21, NWc 12-10n-3w, Tinsley field, tested salt water and gas-cut mud in a drill-stem test at 11,020-37 feet with packer set at 10,988 feet. There have been no reports as to whether these shows in the Smackover lime have commercial possibilities, although porosity encountered in the section has been discouraging. Plains Producing Company is preparing to drill E. W. Milner 5, NE SW SW 7-10n-2w, a semi-wildcat, which if successful would mean a good extension of the Tinsley field. The company already has production north of the new site and has drilled 2 dry holes nearby. Union has taken out permit to deepen R. A. Carson 2, NE 26-10n-3w, Tinsley field, where several deepening operations are in progress.

Wayne County: Gulf's G. S. Stanley 26, SWc SE SE 6-9n-8w, Eucutta field, has swabbed about 100 barrels of oil per day and is pumping into pits, after successfully testing the Eutaw section. Lyons & Prentiss' T. F. Reynolds 4, NEc SW NW 18-9n-8w, Eucutta, is preparing to put the well on the pump after a successful swab job. Production is from 5258-63 feet in the Eutaw horizon. Magnolia Petroleum Company's W. W. Reynolds 3, SEc 18-9n-9w, is preparing to work the hole over after well went to salt water. Casing was perforated at 5188-92 feet with packer set at 5167 feet and swabbed successfully when salt water started producing.

Smith County: Gulf's O. P. Foley 1, SE NW 8-10n-13w, wildcat which recently resumed drilling after being abandoned at a total depth of 2269 feet last January, revealed salt in cores below 2647 feet. Well is now drilling below 2717 feet. Gulf's Grissom-Ainsworth 1, NEc 21-10n-14w, is waiting on cement after running casing to 1661 feet.

☆ Alabama

State's Second Oil Field Opened in Choctaw County

Alabama's second oil field opened in Choctaw County; offset started.

Choctaw County: The Carter Oil Company's Sam Allman 1, NE SW 5-10n-3w, 3 miles east and 1 mile south of the Gilbertown field, swabbed 56 barrels of oil and 16 barrels of salt water during a 24-hour test. The well is estimated good for 100 barrels per day on pump. Crews are waiting on pumping equipment before taking initial gauge. The well is producing from the Eutaw sand, topped at 3337 feet. Casing was set to 3460 feet, with total depth 3461 feet. Carter has spudded in Caroline Moseley 1, C SW SE NW 5-10n-3w, north offset to the discovery.

Hunt Oil Company's Robert Land 5, C SE NE 31-11n-4w, Gilbertown field, is pumping into pits after setting tubing and running rods to 2822 feet. Total depth is 3651 feet.

Washington County: Wayne Refining Company sidetracked lost tools at 4432 feet, where it was previously reported abandoned, and is drilling below 5203 feet in shale in Willie Mitchell 1, NW NE 12-8n-3w.

Wilcox County: Southern Natural Gas Company's Morgan Estate 1, C SE SE SW 32-12n-5e, is drilling below 5814 feet in sand and shale with no commercial showings so far reported.

Clarke County: The California Company is drilling below 1063 feet in White City Plantation 1, 6-7n-1e.

Walker County: Glen D. Rose is below 575 feet in First National Bank of Birmingham 1, C W½ NW SE 30-12s-7w.

Florida

Humble Oil & Refining Company took a drill-stem test from 9864-90 feet in G. C. Carleton Estate 1, C SW NE 34-38s-29e, Highlands County, but recovered only a 4000-foot water cushion and 42 feet of mud. Drilling continues below 10,590 feet in anhydrite.

Charlotte County: Humble's Lownes-Treadwell 1-A, C SW NE 17-42s-23e, is drilling chalk and dolomite below 6830 feet.

Collier County: Humble's Sunniland field test, Gulf Coast Realties 7, C SW NE 17-48s-30e, is fishing for tools at 8621 feet, in lime and anhydrite.

Monroe County: O. D. Robinson's State 1, 29-59s-40e, recovered tools after a long fishing job and is drilling below 6085 feet.

Calhoun County: The Pure Oil Company's International Paper Company 1, 25-1s-11w, is drilling below 2340 feet.

Louisiana Report

The geologic names and correlations committee of the South Louisiana Geological Society has completed a study on a portion of the stratigraphy of the South Louisiana Gulf Coast area. A report on this study has been published entitled "Program Report of the Eocene, Oligocene and Lower Miocene Series."

Copies of the report may be obtained at $3 each from W. R. Canada, 517 Weber Building, Lake Charles, Louisiana.

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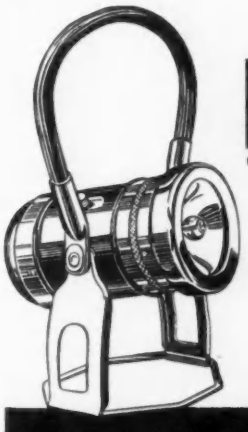

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☆ California

Production from Fractured Schist Arouses Interest

Production from fractured Schist attracts operators in Edison-Mountain View area; second well reaches interesting stage at Cymric; Lost Hills deep test tied up with fishing job; Los Angeles wildcat to make production test; Newhall well making only 5 barrels with 80 percent cut.

Kern County: Development of production from basement fractured Schist in the Edison field is likely to become quite extensive. H. H. Magee's Dougherty 5 in 14-30s-29e, which was brought in a week ago for 700 barrels of 17.5-gravity oil, was making 1140 barrels on a recent gauge. Magee's Brown 4, which was deepened into the Schist to 2770 feet, has cemented 5½-inch casing at 2644 feet and is swabbing for production. His Dougherty 6, another deepening job, is undergoing formation tests.

Four miles south, in the Arvin-Mountain View area, Richfield Oil Corporation is attempting to develop Schist production in its DiGiorgio 3-1, 3-31-29. On a formation test at 5325-78 feet and with tested open 45 minutes, gassy oily mud, showing no free water, was recovered. The well is being cleaned out to deepen.

In the Cymric area of the McKittrick field, where Union Oil Company recently discovered a new producing zone, Union's second well, Anderson 55-26 in 26-29-21, has 7-inch casing standing cemented at 3530 feet, total depth 4012 feet. Top of the Carneros sand was placed at 3917 feet. Standard Oil Company of California's Cymric test, Fitzgerald 55 in Sect. 24, is drilling below 4190 feet in shale.

Little progress has been made in Standard's Lost Hills deep test, Cahn 58-4, for several weeks. After overcoming lost circulation, the operator has been held up fishing for drill pipe.

Los Angeles County: Dumm Brothers Petroleum Corporation's Olympic 15, near Lincoln Park, a few miles from downtown Los Angeles, is cleaning out to make a production test after recementing through perforations twice at 1180 feet. The well has good sands to test from 1180 feet to bottom at 1260 feet.

Seaboard Oil Company's Los Angeles city wildcat, L. A. Brick 1, is drilling below 6158 feet without having encountered anything of particular interest.

Signal Oil and Gas Company's Newhall wildcat, Signal-Needham 1 in 13-3n-16w, open from 3850 to 4998 feet, is reported pumping at a rate of 5 barrels daily, cutting 80 percent. Gravity of the oil is 28. Repeated tests below 2460 feet have recovered only a little oil with mud and water.

Ventura County: In the Fillmore area, Standard of California's deep test, Elkins 1 in 6-3n-19w, continues to core ahead with depth last reported at 12,381 feet.

At Ojai, Volunteer Petroleum Corporation's Hilltop 2 in 7-4n-21w, which pumped only water with a little heavy oil from 3290 feet, is rigging up to deepen. The company's Pyramid 1 in the same section is drilling at 30 feet with light cable tool equipment.

In the Long Canyon area Shell's McBean 1 in 33-3n-20w is coring below 8900 feet. Packer has failed each time on several formation tests below 8700 feet.

Madera County: In the Gill Ranch gas field The Texas Company has completed Gill 655-17 in 17-31s-16e, flowing 10 million cubic feet with 1800 pounds casing head pressure. Casing was cemented on bottom at 4495 feet and gun-perforated between 4445-55 feet and 4474-84 feet.

Fresno County: Union's Irvine Ranch wildcat, Irvine 65-13 in 13-13s-12e, has cemented 11¾-inch surface casing and will shortly resume drilling.

Tide Water Associated Oil Company's deep test of the Cantua Creek area, S. P. 82-15 in 15-17s-15e, is drilling below 11,670 feet in shale.

Solano County: Shell Oil Company is preparing to make a formation test just above 4810 feet before abandoning Hamburger-Treadwell 1 in 36-6n-2e. Total depth of this wildcat is 6300 feet.

Oregon

The Texas Company's Clatskanie 1 wildcat, 5 miles southeast of Clatskanie, Columbia County, Oregon, is drilling and coring at approximately 3950 feet. Core samples are being sent to the company's laboratory at Signal Hill, California.

☆ Illinois Basin

Hamilton County, Illinois, Discovery Flows After Shot

Carter's Hamilton County, Illinois, discovery swabs and flows 58 barrels in 8 hours after shot; Gulf prepares to test Clay County pool opener; offset to Mattoon extension completed.

Hamilton County: The Carter Oil Company's Provident Mutual Life Insurance Company 1, NW NW SE 14-4s-7e, a discovery 1¾ miles northeast of the Bungay pool, swabbed 92 barrels of oil in 24 hours and after a 50-quart shot swabbed and flowed 58 barrels in 8 hours. Production is from Aux Vases sand at 3286-3318 feet. Operator was still testing and cleaning out hole.

Clay County: Gulf Refining Company's Colclasure 1, SE SW NW 12-4n-5e, pool opener 4 miles south of the Iola field, has set casing at 2482 feet and is ready to drill plug for test.

Wayne County: The Texas Company's Bowyer 1, SE SE NW 34-1s-5e, 3 miles south of the Coil pool, was still testing after swabbing 234 barrels of oil in 24 hours from Aux Vases sand at 2974-81 feet.

Coles County: Kuehne Manufacturing Company's Freeman 1, NE SW NE 23-12n-7e, a northwest extension of the Mattoon pool, was ready to drill plug for test of Aux Vases and Cypress sand at 1947-64 and 1773-81 feet, respectively.

Howard Gordon and others' Litwiller 1, east offset to the same operators' Brining 1, which extended the Mattoon pool nearly 2 miles southwest, was completed for 232 barrels daily from Aux Vases and Cypress sand. The operators' Watson 1, a south offset to the Litwiller, is nearing completion for same production.

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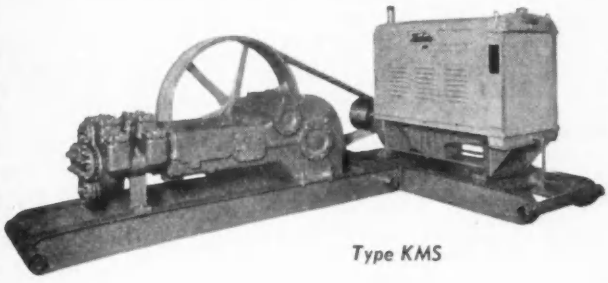

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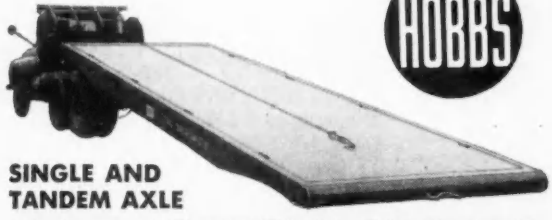

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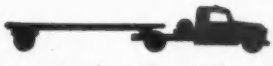

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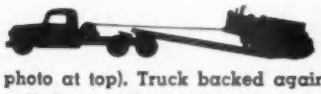

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TRADING POST SECTION

ON PAGE 87 OF THIS ISSUE

☆ Michigan

State Record for Starts Established on V-J Day

Michigan produced a discovery and set a year's record for new starts the day the Japs surrendered. However, despite several recently completed or showing outposts and a marked increase in all classes of development, the picture continues far from good. None of the wildcat developments offer immediate prospects of proving up to better than small isolated oil pools. Meanwhile, production continues on a slow but steady decline.

Gratiot County: Arthur E. William's Cook 1, SW SE SW 14-9n-1w, Elba Township, logged Traverse lime at 2434 feet and an oil pay at 2436-38 feet. It showed 400 feet of oil in 12 hours natural and swabbed 12 barrels net in 4 hours after 500 gallons of acid. It will be equipped to pump with production estimates ranging from 20 to 75 barrels per day. Williams, C. W. Collins and Merrill Drilling Company control the bulk of the acreage in the expected development area. Work carried on in 1927-30 within a ½ mile of the discovery resulted in a well that produced for a few weeks in the Traverse before going into water.

Creole Plans $35 Million Venezuela Investment

Creole Petroleum Corporation will reinvest approximately $35 million of current net income in drilling and development in Venezuela during 1945. Average production has been 409,000 barrels a day for the first six months of 1945, and the consolidated net income for the period was $37,500,000.

The company also reported selection of Port Turiamo as the site of a new refinery, pending approval of the Venezuelan congress, and also the first discovery of oil on new concessions in eastern Venezuela.

☆ Canada

Saskatchewan Gets First Large Natural Gas Field

Bata Petroleums Ltd., Saskatchewan Independent, has completed 2 wells above 2100 feet with open flow gas potential of around 40 million cubic feet daily, to establish the Vera-Unity field as the first large natural gas field in Saskatchewan. The twin strikes . . . made in the Basal Lower Cretaceous sand at Bata 7 and 8, 1¼ miles apart . . . established that horizon as a major gas source in an area already established as a substantial gas field from the Viking sand between 1600 and 1700 feet, and offer the 850,000 residents of Saskatchewan their first real prospect of a switch from coal and wood to natural gas.

The Viking sand, found at average depth of 1650 feet, has been proven over an area of 1900 acres by a string of 8 Bata wells, of which 6 (including the Nos. 7 and 8) were successful.

Bata 7, lsd 13 13-39-23w3, obtained an estimated 3 million cubic feet daily in the Viking, then continued on to make initial test of the Basal Lower Cretaceous (penetrated, but not tested at 4 earlier Bata wells). After a drill-stem test yielded a 3,900,000 cubic foot flow through ¼-inch tester, No. 7 cased to bottom and gun-perforated opposite the B.L.C. sand (2043-2060 feet). The results were 5 times the flow anticipated.

Through 3-inch flare line, with 330 pounds back pressure, the well was clocked at 34 million cubic feet. On experimental operation, flow was recorded at 6,160,000 cubic feet against 700 pounds back pressure; 14,740,000 against 650 pounds; and 18,540,000 against 600 pounds. Closed in, it built up to maximum top hole pressure of 715 pounds in 6 minutes. The gas is "wet" but oil content has not yet been determined.

Bata 8, lsd 5 23-39-23w3, a mile west and ½ mile north of No. 7, gave 1 million cubic feet daily through ¼-inch tester from the Viking (1652-1668 feet), and set casing at bottom after showing 3,540,000 cubic feet rate from the B.L.C. through ¼-inch tester. Casing was perforated opposite the latter sand from 2055 to 2058 feet, the upper part of the horizon, and well was clocked at 15 million cubic feet daily against back pressure of 570 pounds. Its open flow potential is rated comparable to that of No. 7.

Bata is now proceeding with a series of widely spaced extension tests to determine boundaries of the field. Now drilling is Bata 9, lsd 6 14-39-23w3, a mile south and ¼ mile west of No. 8, and a mile southwest of No. 7.

When and if adequate reserves are established, the company will proceed with arrangements for serving gas to Saskatchewan cities and towns. The Vera-Unity field is in West Central Saskatchewan, 33 miles east of the Alberta border, 45 miles southwest of the City of North Battleford, and 110 miles northwest of the City of Saskatoon. The company has reservations and leases covering oil and gas rights underlying 580,000 acres centering on the Vera-Unity field.

Standard Oil Company of California, through its Standard Development Company Ltd., has taken up a Crown Reservation covering 181,096 acres of oil and gas rights on the southeast Alberta plains, between the City of Medicine Hat and the Saskatchewan border. Geological work on the block is now under way. The block covers the bulk of Townships 12, 13 and 14, Ranges 1, 2 and 3w4.

Admiral Oils Ltd., and British Dominion Oil & Development Corporation, Alberta Independents, have joined to develop the Hay Lake Dome, a sesimographed structure in the southwest corner of the Alberta Plains, just north of the Montana boundary. Initial well has been staked on the indicated structure high, lsd 7 22-1-17w4. Site is 3½ miles north of the Montana border. It will test the Madison limestone and the overlying sands, with completion depth estimated at 3300 feet.

Island Development Company (Socony-Vacuum and Cities Service) has established a new Canadian depth record at Hillsborough 1, off the coast of Charlottetown, Prince Edward Island. Drilling is now proceeding below 13,209 feet, in a thick salt and gypsum bed in the Mississippian, with formation swelling causing some difficulty. Despite this, 131 feet was added in the latest week of record. Previous Canadian depth record was 12,955 feet, set at Imperial Oil's Coalspur 1, Alberta Foothills.

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EXPLORATORY COMPLETIONS

CALIFORNIA WILDCATS

Kern County—Failure: Rocket Pet. Corp.'s Community 1, 29-30s-29e, Mt. View area, cored poor oil sd 4900-5000 ft, Santa Margarita 5557 ft, abnd carbonaceous silt 5683 ft.

Los Angeles County—Failure: Continental's Turnbull Community 6, (OWDD), 14-2s-11w, Turnbull Canyon area, otd 2066 ft, abnd 3892 ft.

ILLINOIS WILDCATS

Bond County—Failure: Bond Co. Gas' Barwood 1, nw ne sw 36-7n-4w, abnd 925 ft.

Clay County—Failure: Gulf's McVeigh 1, sw nw se 34-3n-6e, abnd 3190 ft.

Clinton County—Failure: Big Chief Drlg.'s Giesecke 1, se sw ne 9-2n-5w, abnd 2942 ft.

Crawford County — Failure: Pete Sutphin's Bailey 1, sw ne ne 28-6n-13w, abnd 999 ft.

Jasper County—Failure: D. E. Schock et al W. H. & Jesse Lancaster 1, se se nw 1-5n-8e, abnd 3184 ft.

Jefferson County—Failure: C. A. Lynch's Richardson 1, nw ne sw 20-3s-3e, abnd 2892 ft.

Macoupin County — Oil Discovery: Fred Mudgett's Weyen 1, se se se 8-8n-6w, Potts 630 ft, pump 10 bbls, td 643 ft.

Madison County—Failure: Sohio's Huber 1, se se ne 5-4n-5w, abnd 1984 ft.

Wayne County—Failure: Pure's Holland 1, sw sw se 13-1s-8e, abnd 3215 ft.

White County—Failure: S. L. Dedman et al's Wood 1, ne sw se 6-2s-10e, abnd 3472 ft.

INDIANA WILDCATS

Daviess County—Failures: R. J. Hyatt, Tr.'s Stilwell 1, sw nw ne 25-3n-7w, abnd 1231 ft.

Crosby & Feltis' Hyatt Est. 1, sw sw nw 13-4n-7w, abnd 970 ft.

KANSAS WILDCATS

Barton County—Failure: Lion's Hammeke 1, sw nw 13-19s-12w, Lans 3103 ft, Arb 3376 ft, abnd 3450 ft.

Ellis County — Failure: Derby Oil Co.'s Schumacher 1, nwc 1-15s-17w, Lans 3197 ft, Cong 3442 ft, Arb 3495 ft, abnd 3530 ft.

Finney County — Gas Discovery: Atlantic's Wright 1, se nw nw 33-21s-34w, Kri sd 2537-62 ft, flow 5 mln gas, td 4915 ft.

Rice County—Failure: Ed Swearer et al's Blake 1, se se ne 6-18s-6w, Lans 2832 ft, Miss 3608 ft, abnd 3685 ft.

Rooks County—Failure: El Dorado Oil Ref. Co.'s Verveka 1, sw nw se 29-8s-19w, KC 3374 ft, Arb 3534 ft, abnd 3586 ft.

Rush County—Failure: Skelly's Scherman 1, ne ne sw 6-18s-16w, Lans 3247 ft, Cong 3463 ft, Gran 3521 ft, abnd 3523 ft.

Stafford County—Failure: Plains Expl. Co.'s Bowman 1, sw nw 17-23s-11w, Lans 3320 ft, Cong 3615 ft, Vi 3650 ft, Simp 3689 ft, Arb 3759 ft, abnd 3784 ft.

Trego County—Failure: Lauck & Moncrief's Musgrave 1, sw sw ne 31-11s-21w, Lans 3610 ft, Arb 4024 ft, abnd 4060 ft.

KENTUCKY WILDCATS

Crittenden County — Failure: Jewell Resnick's Garrett 1, 8-L-19, abnd 1745 ft.

Daviess County—Failure: F. McIntyre's Fee 1, 12-Q-30, abnd 834 ft.

Henderson County—Failure: R. C. Halbert's Cooper 1, 11-P-27, abnd 2742 ft.

Ohio County—Failure: S. W. Mitchell et al Baughn 1, 12-M-33, abnd 370 ft.

NORTH LOUISIANA WILDCATS

Madison Parish—Failure: Murphy-Sun's Joe Mahony 1, 10-17n-11e, 3400-05 ssg, Paluxy 3404 ft, abnd 4031 ft.

West Carroll Parish—Failure: F. Kirk Johnson's J. B. McIntosh 1, se ne 4-22n-10e, abnd in Smackover li 4905 ft.

MICHIGAN WILDCATS

Allegan County—N. Allegan Oil Discovery: C. W. and Spencer Cooks' Boyer 1, sw se sw 32-3n-13w, Monterey Tnsp, Traverse li 1475 ft, pay 1472-75 ft, 100 ft oil nip, pump and flow 16 bbls 5 hours after acid, td 1480 ft.

Allegan County—Failures: Arthur J. Boeve's Fleming 1, se nw nw 35-3n-16w, abnd 1365 ft.

Michigan Devonian Pet. Co.'s Blaukamp 1, sw nw sw 18-4n-14w, abnd 1625 ft.

Genessee County—Forest Oil Discovery: H. H. Heinig's Elliott 1, w½ nw se 12-9n-8e, Berea 1489 ft, pay 1502 ft, flow est 8 bbls day, td 1506 ft.

Gratiot County — Elba Discovery: Arthur Williams' Cook 1, sw se sw 14-9n-1w, elev 665 ft, Traverse 2425 ft, Traverse li 2434 ft, pay 2436-38 ft, 400 ft oil nip, swab 12 bbls in 4 hrs, 500 gals acid, td 2438 ft.

Isabella County — Failure: Columbia O&G Co.'s Fox 1, n½ nw se 16-13n-5w, Dundee 3585 ft, abnd 3603 ft.

Kalamazoo County—Failure: W. D. Gannett's Kinney 1, sw se ne 28-3s-11w, abnd 1353 ft.

Kent County — Failure: Fisher-McCall Oil Co.'s Hoffaner 1, sw se ne 26-8n-10w, abnd 2433 ft.

Mecosta County—Failure: Taggart Brothers Co.'s Ladner 1, c se 3-14n-10w, abnd 1170 ft.

Montcalm County—Failure: Gordon Oil Co.'s Christensen 1, nw sw ne 2-11n-6w, Dundee 3591 ft, abnd 3610 ft.

Osceola County—N. Lincoln Oil Discovery: Lupher-Dr. Co.'s Kessinger 1, se se nw 5-18n-10w, Traverse li 2945 ft, pay 2945-48 ft, flow 500 bbls 17½ hours, td 2948 ft.

Washtenaw County—Failure: W. H. Colvin Jr.'s Meinzinger 1, se ne nw 12-2s-7e, Trenton 3800 ft, Knox 4687 ft, abnd 5692 ft.

MICHIGAN OUTPOST

Ogemaw County — Clayton Failure: Ohio's Mills 4, ne nw ne 35-21n-3e, abnd 2742 ft.

MISSISSIPPI WILDCATS

Attala County — Failure: Shell's H. H. Wheeless 1, nec 5-14n-9w, Eutaw 2576 ft, Tuscaloosa 3163 ft, abnd 6217 ft.

Holmes County—Failure: Sohio-H. A. Fleishman's J. Garland 1, swc nw 27-13n-3e, Eutaw 4574 ft, Tuscaloosa 5325 ft, Comanchean 5920 ft, abnd 5949 ft.

Jefferson County—Oil Discovery: Humble's M. R. Smith 1, sec 12-9n-1e, elev 211 ft, Wilcox 3633 ft, Austin 8445 ft, 1st sand 8870 ft, Tuscaloosa 9410 ft, perf 9730-36 ft in Massive, flow 217 bbls 37.4-gr, ¼-in tbg ch, tp 1925 lbs, td 11,299 ft.

Madison County—Failure: Union Prod. Co.'s E. P. Cameron 1, c ne se 8-9n-2e, Eutaw 5668 ft, Tuscaloosa 6345 ft, Massive 7027 ft, abnd 7520 ft.

Montgomery County—Failure: J. W. Black's J. D. Patterson 1, nec ne sw 25-19n-6e, Eutaw 2448 ft, Tuscaloosa 2772 ft, abnd 4012 ft.

Rankin County — Oil Discovery: Leonard Jones' E. P. Rainey 1, sw se ne 14-5n-1e, elev 268 ft, pump 40 bbls 14.9-gr oil, 600 bbls salt wtr, td 2466 ft.

Wilkinson County — Failure: Rogers Lacy's W. S. James 1, 43-1n-1e, Wilcox 6670 ft, abnd 6862 ft.

MISSISSIPPI OUTPOST

Marion County—Baxterville Extension: Texas Co.'s L. V. Ladner 1, sec ne 12-1n-17w, Tuscaloosa 7707 ft, Massive 8704 ft, Comanchean 8978 ft, dual comp, flow 303 bbls oil fr perf 8756-80 ft in Massive; flow 1,990,000 gas fr 7880-98 ft in Tuscaloosa, td 9012 ft.

NEW MEXICO WILDCATS

Santa Fe County—Failure: P. B. English-Southern Union Gas Co. et al's Fullerton-Dodson 1, 330 nsl 4390 ewl 16-12n-10e, Pennsylvanian 2495 ft, granite wash 3200 ft, abnd 3210 ft.

Torrance County—Failure: Cardinal Oil Co.'s State 1, 3-8n-14e, abnd 1950 ft.

OKLAHOMA WILDCATS

Garvin County—Failure: Texas Co.'s Taylor 1, nw nw ne 9-3n-3e, abnd 2720 ft.

Logan County—Failure: J. E. Trigg's Wilson 1, ne sw sw 31-15n-2w, Miss 5965 ft, Wdf 5980 ft, Misener 6050 ft, Hunt 6055 ft, 1st Wx 6325 ft, 2nd Wx 6415 ft, abnd 6416 ft.

Noble County—Failure: Chas. Jenkins' Armstrong 1, sw nw 2-23n-2w, abnd 1299 ft.

Okfuskee County—Failure: Herndon Drlg. Co.'s Replogle 1, ne nw ne 13-13n-7e, abnd 4180 ft.

Payne County—Failure: Ashland's Morgan 1, se sw sw 1-18n-4e, Miss 3628 ft, Vi 3790 ft, 1st Wx 3846 ft, 2nd Wx 3872 ft, abnd 3885 ft.

Seminole County—Failure: Mid-Continent's Patterson 1, sw ne se 29-9n-7e, Gil 3441 ft, Mayes 3780 ft, Hunt 4145 ft, abnd 4254 ft.

Seminole County—Discovery: F. C. Hall's Payne 1, ne ne nw 20-6n-7e, Sen sd 1900-60 ft, pump 46 bbls, td 4354 ft.

WEST TEXAS WILDCAT

Presidio County—Failure: Stanolind's Presidio Trust 1, 355 nsl and 949 wel D&P Ry. 99, blk 3, elev 3894 ft, abnd 5001 ft.

WEST TEXAS NEW PAY TEST

Ward County—Monahans Shallow Oil Discovery: Shell's Sealy-Smith 6, c nw se G&MMB&A 37, blk A, 2850 n by w of Ellenburger prod, elev 2746 ft, brown li 2200 ft, Yates 2260 ft, base Permian 7495 ft, Miss sh 7600 ft, Devonian 7988 ft, 5000 gals acid Holt li perf 4730-5020 ft, flow 481 bbls 37-gr, gor 910/1, td 8058 ft, pb 5040 ft.

WEST CENTRAL TEXAS WILDCATS

Hamilton County—Failure: Homer W. Snowden et al's Bratton 1, 330 out swc Dennis Cohagan sur, Marble Falls 3200 ft, Ellenburger 3850 ft, abnd 4372 ft.

Runnels County — Failures: Geo. Callihan-Blakley's Jennings 1, 330 out nwc E. Morris sur 332, elev 1768 ft, Swastika 2437 ft, Gunsight 2651 ft, abnd 3120 ft.

SOUTHWEST TEXAS WILDCATS

Duval County—Failures: Argo Oil Corp.'s Leroy Denman 1, 330 fr n&wl lot 3 blk 14, Jose Marcello Hinojosa Gr, Relaitos sbdn.

The OIL WEEKLY'S TRADING POST

USED EQUIPMENT FORUM

CLASSIFIED ADS . . . EQUIPMENT . . . SERVICES . . . PERSONNEL

FOR SALE

■ FOR SALE: Two Johnson Steam Rigs, with three boilers to each rig, one 16 inch and one 18 inch pump with each rig, about 5,000 feet 4½ inch drill pipe with one rig and none with the other. All of the equipment in A-1 shape, boilers have just been re-flued on each rig. 12 x 12 engine for both rigs. These rigs are capable of drilling 6,000 feet and are priced to sell. Also one 5½ inch draw-works unitized and used for power, together with a Lebus clutch, priced to sell. Get in touch with J. B. Daniel, Phone 122, Fairfield, Texas.

■ FOR SALE: Rotary Drilling Rig:
3—110 H.P. Boilers,
250-lb. W.P. Oil Well Engine,
18" Union Tool Pump, almost new,
No. 12 R.B. 25½" National Table,
Boykin R.B. Traveling Block,
Oil Well R. B. Crown,
Ideal Hook 8",
Swivel,
Kelly Joint,
Hose,
Union Tool Draw Works Unitized,
Boiler Feed Pumps,
Generator,
Hot Water Heater,
Lubricators, all in one unit,
8' x 12' Tool House and contents,
Pipe Connection Rack,
3600' 16.60-lb. Pipe full hole joints,
Slips,
Elevators,
Links,
Indicator, all in good condition.
If interested in real bargain, write or phone Ed S. Holmans, Gladewater, Texas.

■ FOR SALE: Used "Welderz Frend" acetylene gas generators. I buy and recondition. W. B. Mackey, 6509 Hillsboro St., Houston, Texas, Phone W-7714.

■ FOR SALE: Four 100 HP 300 WP Lucy rotary boilers, completely reconditioned and guaranteed to pass state or insprance inspection. General Supply Co., 511 E. Atchison St., Pampa, Texas.

■ FOR SALE: Wilson Giant Workover rig with: Full water circulating brake rings, chain transmission, powered with WAKU Waukesha Engine, 7¼ x 12 Emsco pump, powered with WAKU Waukesha Engine, 25½" A.P.I. Emsco rotary. New 4 sheave McKissick traveling block, 6000# test Cameron blow-out preventer complete with three sets of rams, 7 x 12 tool house. All valves and unions 6000# test where necessary. Rig in A-1 condition and complete with hand tools. For servicing wells to 10,000 feet. Available about 10th of August.
R. V. West
Office Ph. Ch. 4-5591
Res. Ph. K 3-5318
Houston, Texas.

■ FOR SALE: Approx. 7500 feet of 3½ inch 13.30 pound Range one SIUE Drill Pipe with Regular Hughes Acme tool joint on each double. Good condition. Located Company warehouse at Corpus Christi, Texas. Priced to sell at 45 cents per foot f.o.b. present location. Telephone 4741 for inspection. Republic Natural Gas Company, Corpus Christi, Texas.

■ SURPLUS FOR SALE: One 32 HP Reid Gas Engine. One 25 HP Oilwell gas engine. Two Angle iron and one tubular Steel Derricks for pumping wells. One 25 HP oilfield Boiler. All priced to sell. C. M. Barrington, Santa Anna, Texas.

TEXAS RANCH

3100-Acre Ranch on Head Waters of Sabinal River, 85 miles northwest of San Antonio, Texas, Bandera County. Ranch house, fenced, running water. REA Line through property. Deer, Wild Turkey and good Hunting Lodge. For quick sale $12.50 per acre. Contact Merrill & Stone, owners, 1033 Bankers Mortgage Building. Phone Preston-7814, Houston, Texas.

FOR SALE

■ FOR SALE: No. 2 National with chain driven sandreel and jackshaft $750. Bargain on parts for No. 2 Nationals. Kersey & Company, Artesia, New Mexico.

■ FOR SALE: Two heavy duty oil well pumping units with 7,000 ft. of sucker rods, practically new, located Segno Oil Field. Also 84 ft. pumping derrick with 4" relegs and substructure. Providence Oil Company, 410 Gulf Building, Houston, Texas.

HELP WANTED

■ Wanted by a consulting geophysical organization: Petroleum Engineers with Hayward Mud-logging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 45, c/o The Oil Weekly, Houston, Texas.

■ Petroleum Engineer for well servicing company. Address: Box 4, c/o The Oil Weekly, Houston, Texas.

■ Graduate Geologist for foreign exploration; at least three years experience in field geological mapping, preferably in Rocky Mountains or in South America.
Field Geophysicist to supervise contract geophysical parties in eastern Venezuela; seismograph party chief experience desirable.
Well Geologist (Foreign) to watch geologic progress of wells, care for samples, pick casing points, etc. Paleontological training, experience in well progress geology desirable. Major oil company. Apply P. O. Box 2819, Dallas, Texas.

■ FIELD SUPERINTENDENT: Location Eastern Venezuela. Graduate Engineer preferred, well versed in oil field operations, and with extensive supervisory and administrative experience. Should be able to organize and coordinate the varied operations of an exploratory drilling program. Must have good knowledge of oil field conditions generally, and be able to supervise several service departments such as transportation, machine shop and field engineering. Will have charge of the central camp where these activities are centered. In addition to salary there is paid a living allowance and the company furnishes a house at headquarters. Major oil company. Reply P. O. Box 2819, Dallas 1, Texas.

■ WANTED: Driller experienced in the drilling of seismograph shot holes with either hydraulic or mechanical pulldown type drilling rigs. All operations within continental United States. Write, giving qualifications, experience and draft. status, if available under W.M.C. regulations, to Phillips Petroleum Company, Geophysical Section, Personnel Division, Bartlesville, Oklahoma. All inquiries confidential.

■ WANTED: Man qualified to prepare maps and supervise the making of maps that are generally used in the Land Department of an Oil Company. Must be able to secure information from county records and other sources for preparation of maps. Should be experienced in making maps used in the Production and Geological Departments. If interested Address: Box 11, c/o The Oil Weekly, Houston, Texas.

■ LAND and LEASE MAN, by progressive established independent oil company, should have some geological and production experience, familiarity with titles and good trading ability and be capable of handling deals to conclusion. Salary and carried interest to right party. Give experience, references, and all details in first letter. Address: Box 9, c/o The Oil Weekly, Houston, Texas.

■ Experienced seismograph Party Chiefs, Computers, Observers and Drillers. Good opportunity for advancement in expanding geophysical company and eventually for foreign service if desired. Address: Box 10, c/o The Oil Weekly, Houston, Texas.

NOTICES

OIL LOANS WANTED

We want good oil loans. We also buy royalties and oil payments.

BAPTIST FOUNDATION
Baptist Bldg. Dallas, Texas

Copita Farm & Garden Trs, 542.82-ac lse, abnd 5200 ft.

Government Wells Oil Co.'s E. C. Lundell 1, 2970 fr wl 2340 fr sl sect 140 654-ac lse, Lundell area, temp abnd 2595 ft.

McMullen County — Failure: Quintana Pet. Corp.'s S. Tex. Syndicate 8-F, 2100 fr wl 330 fr nl Mary Lane sur 5, 6800 fr nl 96,000-ac lse, abnd 5868 ft.

LOWER TEXAS COAST WILDCATS

Brooks County — Failure: Sun's Mary M. Lasater 2-B, 1412 fr wl 467 fr m/nly/sl 799-ac lse, 2766 sw well 1, F. Benavides sur 329, abnd 1060 ft in salt.

Fayette County—Failure: Clark & Cowden Drlg. Corp.'s Louise Paulus et al 1, 330 fr s&wl 25-ac tr 3 which is w 25 acs of 50-ac tr, 2500 fr nl 330 fr wl T. H. Harris sur, abnd 2514 ft.

Karnes County—Failures: Gulfshore Oil Co. et al's A. J. Kilodzie 1, 1692 fr sel 467 fr swl 140.67-ac lse, Louis Manchaca Gr, abnd 6075 ft.

Seaboard of Dela.'s E. N. Hysaw 1, 2400 nw alg nel 1600 sw at ra fr e cor 1069.11-ac lse, Don Erasmo Seguin sur, jnkd and abnd 4088 ft.

Live Oak County—Hinnant Oil Discovery: Wright & Christie's Mrs. M. A. Hinnant 1, 660 fr nw&swl 80-ac lse, Ed Quinn sur, pay 5772 ft, perf 5772-80 ft, flow 78.3 bbls, 7/64-in, gor 1320/1, tp 1100 lbs, cp 1950 lbs, td 6518 ft.

UPPER TEXAS COAST WILDCATS

Brazoria County — Failure: Glenn H. McCarthy's S. W. Hudgins 1, 330 ne at ra fr Oyster Crk, start n cor 1886.24-ac lse go 7030

SITUATIONS WANTED

■ Position Wanted: Drilling and production superintendent with large independent operator desires change. Middle aged, good education, sober; competent and capable of holding important position with large or small company. A-1 references from past and present employers. Thoroughly familiar with deep drilling and production in both Gulf Coast and Mid-Continent areas; also specialize in workovers and handling of old production. Address: Box 1, c/o The Oil Weekly, Houston, Texas.

■ WANTED: Position as Salesman or Sales Engineer for Oil and Gas or Acid Equipment. 15 yrs. experience covering all phases of each. Can offer Ordnance and Industrial References. Will go anywhere in this Country or Foreign. Must have time to give notice. Address: Box 12, c/o The Oil Weekly, Houston, Texas.

POSITIONS WANTED BY SERVICE MEN

■ In the interest of both employers and employes, **The Oil Weekly**, through its Overseas Pony Edition, which is sent free to 6500 former oil men now in the services, has offered to run advertisements from those who will be seeking work once they are discharged. In some cases **The Oil Weekly** has a few more details but, generally speaking, direct correspondence would be advisable. Unless otherwise indicated it may be some time before the person named in the advertisement is available.

■ Interested in postwar job in oil industry. Completed 4-year technical high school course, including drafting. Experience as inspector in bearing plant, setting gauges, reading blue prints; 14 months' overseas experience in surveying crew. Pfc. R. Snyder, Co. A 1905 Engrs. (Avn. Batt.), APO 218, New York.

■ Seabee, 20, wants postwar employment with oil company as member of field survey party or related work. 2½ years' experience as chainman and rodman. Marvin A. Baird, 23rd N.C.B., c/o F.P.O., San Francisco, Calif.

SERVICES

■ To Manufacturers and Distributors. Let us warehouse your stocks, can furnish sales representation also. Warehouses located at Houston, Kilgore and Odessa, Texas, serving Texas, Arkansas, New Mexico, Louisiana and Mississippi. Write, wire or phone, The Brandon Company, Odessa, Texas.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 Houston 1, Texas

sw alg nwl 660 se at ra, B. T. Archer sur, abnd 7520 ft.

Chambers County—Failure: E. R. Brann et al's R. J. Barrow 1, 660 fr n&e&wl 80-ac lse, 660 w of wl T&NO sur sect 5, J. S. Roberts sur, abnd 8951 ft.

Harris County—Failure: Homer W. Snowden's Lobit & Wilson 1, 330 fr nl 800 fr wl 574.12-ac lse & lot 1, blk 1, Shaw & Leeseman sbdn, 330 n 3750 fr wl D. Middleton sur, abnd 8007 ft.

Orange County—Failure: Atlantic's Lutcher-Moore Lbr. Co. 1-D, 3600 fr sl 1650 fr el sect 41, 630.56-ac lse, T&NO sur, Connell area, abnd 9750 ft.

Wharton County—Gas Discovery: Texowell Service & Machine Co.'s Sam Hamberger 1-A, 660 fr s&wl sect 65 WCRR sur, 580-ac lse, perf 4448-58 ft, flow 750,000 gas, ⅛-in, tp 1500 lbs, cp 1800 lbs, td 4511 ft.

UPPER TEXAS COAST NEW PAY TEST

Matagorda County—E. Bay City First Oil Discovery: Stanolind's Eliz. L. Barth 1, 1000 fr el 2250 fr nl I&GN sur 2640 e nely fr disc well, 180-ac lse, pay 10,424 ft, perf 24 shots 10,424-28 ft, flow 40.46 bbls 30.5, 7/64-in, gor 6975/1, tp 3400 lbs, td 10,493 ft.

EAST TEXAS WILDCAT

Hopkins County—Failure: Homer W. Snowden et al's Warren 1, 2480 ewl 292 snl of 100-ac tr and John Bryan sur, elev 563 ft, Pecan chalk 1770-1854 ft, Austin 3124 ft, Woodbine 4015 ft, Georgetown 4980 ft, Paluxy 5770 ft, abnd 6125 ft.

NORTH TEXAS WILDCATS

Archer County—Failure: Wayne King et al's Hale 3, 150 nsl 1050 ewl blk 95, J. W. Harris sur, abnd 1450 ft.

Childress County—Failure: Texas Co.'s F&M Trust Co. 1, c ne nw W&NW Ry. 644, blk H, elev 1921 ft, Ellenburger 7535 ft, abnd 7618 ft.

Foard County—Failure: Humble's Halsell 1, 2260 snl 1980 ewl H&TC Ry. 266, blk A, elev 1341 ft, li 4864 ft, Bateman (lower) li 5240 ft, abnd 6055 ft.

Jack County—Failure: J. M. Bloodworth's Fee 1, 700 fr swl 1694 fr sel M. Anderson sur A-5, abnd 500 ft.

Jack County—Oil Discovery: Roeser-Pendleton-F. Kirk Johnson's McAnally 1, 660 out sec sect 18, blk 2, Henderson CSL sur, elev 1060 ft, 1½ mi e by n of gasser, Bend 4400 ft, flow 120 bbls 41.8-gr, gor 1914/1, via ¾-in on 8½-hr nat gage at 4430-46 ft.

Wilbarger County—Failure: Marion Travis-Paul B. Scott's Zipperle 1, 220 nsl 330 wel ne¼ H&TC Ry. 80, blk 14, li 2750 ft, abnd 2775 ft.

Wichita County—Failure: Akin-Dimock et al's Lalk 1, 200 nsl 1000 ewl blk 286, Waggoner Colony Lands, abnd 2102 ft.

Young County—Failures: Bennett & Bennett's Allison 1, 1200 nsl 750 ewl TE&L Co. sect 266, abnd 813 ft.

F. P. Timberlake & Kelleher's N. Prideaux 1-A, 4119 nsl 1354 wel I&GN Ry. A-1324, abnd 758 ft.

WILDCAT STARTS

CALIFORNIA

Santa Barbara County: General Pet.'s Los Alamos 3, 31-8n-33w, Los Alamos area, lcn.

ILLINOIS

Jasper County: W. W. Shaffer et al's Stifel 1, sw nw se 2-7n-10e, lcn.

Jefferson County: Magnolia's Moss 1, ne sw ne 12-2n-2e, lcn.

Lawrence County: Hayes Drlg. et al's Price 1, nw sw sw 13-2n-13w, lcn.

INDIANA

Daviess County: R. J. Hyatt, Tr.'s Gelkison 1, se se se 24-2n-5w, dr.

Jackson County: A. Seevers et al's Schlenburg 1, ne se sw 11-6n-12e, lcn.

Warrick County: A. M. Perrine's Dukes 1, se sw ne 11-5s-9w, lcn.

KANSAS

Dickinson County: Transwestern's Schlesner 1, sw sw nw 29-15s-4e, lcn.

Marion County: Tom Palmer's Batt 1, ne ne ne 20-19s-4e, lcn.

Rice County: Bridgeport Oil Co.'s Deal 1-B, ne ne nw 31-18s-6w, dr 177 ft.

Rooks County: Derby Oil Co.'s Brown 1, se se 20-8s-16w, mlt.

Sedgwick County: Beech Aircraft's Goodin 1, ne nw nw 34-29s-2e, spud.

KENTUCKY

Crittenden County: L.&S. Drlg. Co.'s C. S. & Bertha Thomas 1, 1-K-19, dr.

Daviess County: Sohio's Clark 1, 5-P-28, lcn.

Henderson County: R. O. Gould's Jones 1, 9-P-22, lcn.

Ohio County: S. W. Mitchell et al's Baughn 1, 12-M-33, comp.

Union County: Wm. E. Styles' Morganfield Coal 1, 16-O-20, lcn.

NORTH LOUISIANA

Caddo Parish: United Carbon Co.'s T. R. Grayson Lbr. Co. 1, 30-19n-15w, Travis Peak

MICHIGAN

Allegan County: Tamblyn Dev. Co.'s Spray 1, e½ nw ne 3-3n-14w, lcn.

Erick Bock's Irey 1, nw nw se 22-1n-16w, lcn.

Gladwin County: T. F. Caldwell's Lenten 1, se se sw 33-20n-1w, rig.

Huron County: Shell's Mitrovich 1, se se ne 31-15n-16e, dr.

Isabella County: Sun's Eddy 1, c nw 2-15n-6w, dr.

Livingston County: Shell's Wilkinson 1, nw se sw 36-4n-3e, dr.

Mecosta County: Chapman Oil Co.'s Minekel 1, s½ sw sw 7-14n-8w, rig.

Gordon Oil Co.'s Rauch 1, e½ ne ne 1-16n-10w, dr.

C. W. Collin's Hoyt 1, sw ne ne 1-13n-8w, rig.

Midland County: Union Dr. & Prod. Co.'s Lanphierd 1, s½ se ne 28-15n-1e, rig.

Missaukee County: Gulf's Ponstine 1, n½ ne se 25-21n-7w, dr.

Newaygo County: Sohio's Hills 1, nw se sw 26-14n-14w, dr.

Wexford County: Sun's Grubbs 1, sw ne nw 21-21n-10w, rig.

MISSISSIPPI

Jeff Davis County: Sohio-Roesser & Pendleton's W. J. Fagan Est. 1, 24-6n-18w, lcn.

Jones County: Gulf's Smith County Oil Co. 1, nw nw ne 19-9w-13w, lcn.

Perry County: Gulf's B. M. Stevens 1, se nw 28-5n-10w, lcn.

Stone County: Harry I. Morgan's G. A. Breland 1, c nw nw 26-2s-11w, rig.

NEW MEXICO

San Juan County: Continental's Dyke-Shiprock 1, 6270 s 10,980 w of swc 31-29n-18w, lcn.

Santa Fe County: E. A. Atkins et al's Fee 1, c nw nw 23-12n-11e, 5000-ft test.

OKLAHOMA

Garvin County: Summit Drlg. Co.'s Wigley 1, nw sw ne 11-4n-1w, dr 220 ft.

Hughes County: Four States Oil Co.'s John 1, sw ne 24-9n-11e, rog.

Jackson County: Texas Co.'s Holt 1, ne ne se 8-1n-19w, dr 155 ft.

Lincoln County: Ashland's Reel 1, nw nw ne 24-12n-5e, lcn.

Stephens & McBride's Ford 1, se se ne 6-13n-3e, lcn.

Logan County: Ace Gutowsky's Taylor 1, sw ne 6-18n-2w, lcn.

Okfuskee County: Manahan Oil Co.'s Huddleston 1, se sw ne 7-10n-11e, lcn.

Oklahoma County: British-American's Whitt 1, ne ne ne 24-12n-2w, rur.

Osage County: Wilcox Oil Co. et al's Osage 1, sw sw sw 18-26n-8e, lcn.

Pottawatomie County: Frank Anderson et al's Good 1, se sw 3-11n-5e, rur.

Stephens County: Anderson-Prichard's Gentry 1, se se sw 4-1s-5w, pits.

Tillman County: Bridwell O&G Co.'s Storm 1, ne ne 23-1s-19w, dk.

WEST TEXAS

Gaines County: Union of Cal.'s Peeler Williams 1, c ne ne PSL 7, blk C-44, 5500-ft San Andres test.

Garza County: A. W. Cherry-Barron Kidd's K. Stoker 1, ne ne ne GH&H Ry. sect 8, blk 2, 3000-ft test.

Irion County: Permian Royalty Co.'s W. M. Noelke 1, 330 out swc e½ of w½ sect 1228, W. T. Collins sur, 2500-ft test.

Pecos County: Bryce McCandless et al's Iowa Realty-Gulf 1, c e¼ of e¼ H&GN Ry. 131, blk 10, 4500-ft Ellenburger test.

WEST CENTRAL TEXAS

Coleman County: Hightower O&R Co.'s W. M. Riley 1, 660 nsl 4150 ewl of J. S. Martin sur 217, 1400-ft cable test.

A. R. McElreath-Suggett & Davidson Dr. Co.'s W. C. Bozeman 1, 1180 nsl 1900 ewl M. B. Tatum sur 741, 2350-ft cable test.

Concho County: Vantex, Ltd.'s B. Frank Jacoby 1, 330 out nec sect 70, BS&F Ry. sur, 4 mi w Eden, 4500-ft Ellenburger test.

Shackelford County: Eltex, Ltd.'s L. G. Davis 1, sw sw sw T&P Ry. 52, blk 13, new pay test offset to shallow wildcat gasser, 5200-ft Ellenburger cable test.

SOUTHWEST TEXAS

Duval County: Edwin B. Cox-Jake L. Hamon's Clara Driscoll 4, 990 fr nl 1650 fr el sect 55 3120-ac lse, Santa Rosalia Gr, 3200-ft test.

Parker & McCune's Central Securities Co. 1, 330 fr n&el blk 10 and 257-ac lse, Diego Hinojosa Gr, 4700-ft test.

Jim Hogg County: M. L. Massingill's E. Roderiquez 1, 660 fr n&wl 160-ac lse and blk M-1, Las Cuevitas Gr, 3200-ft test.

McMullen County: Midstates Oil Corp.'s Nueces Ld. & Livestock Co. 1, 2855 se alg nel fr nec 720-ac lse 1320 sw to lcn, Jacob Matosey sur 86, lcn.

Webb County: Humble's Mary Kate Withers 2, 1980 fr n&el J. Juarez sur 1412, 1320 sw well 1, 4480-ac lse, 7300-ft test.

LOWER TEXAS COAST

Brooks County: Humble's B. A. Skipper, Jr. 2, 660 w of wl 3300 s of nwc S. S. de Mangell 328-ac tr, in 9532.5-ac lse, La Encantada Gr, 2640 s of well 1, 9000-ft test.

Humble's D. J. Sullivan 2-B, 12,540 fr wl 4670 fr sl San Antonio de Encinal Gr, 2640 n of well 1-B, 10,000-ac lse, 10,000-ft test.

Calhoun County: Salt Dome Oil Corp.'s State of Tex. 1-176, 838 fr el 890 fr sl 640-ac lse, San Antonio Bay, State tr 176, 7500-ft test.

Karnes County: Seaboard Oil of Dela.'s E. N. Hysaw 1-A, 2350 nw alg nel 1600 sw at ra fr e cor 1069.11-ac lse, Don Erasmo Seguin sur, 50 se well 1, 4100-ft test, ru.

Southern Minerals Corp.'s W. D. & O. L. Cochran 1, 3000 fr nl 467 fr el 2302-ac lse, D. B. McConnell sur, 6250-ft test.

San Patricio County: La Gloria Corp.'s W. A. Jennings 1, 467 fr nwl 467 fr swl 237-ac lse, 4150 w of Arkansas Fuel's Henry Kellerman 1, John P. Borden sur, 5000-ft test.

Victoria County: Monday Oil Co. et al's Mary F. Miller 1, 467 fr sw&sel blk 26, 319-ac lse, SA&MG sur, 6800-ft test, ru.

UPPER TEXAS COAST

Jefferson County: Glenn H. McCarthy et al's Hebert Trust 3, 4180 e alg c of Port Acres-Fannett Rd fr e bnk Hillerbrandt Bayou th 1524 n at ra, 2650 ne well 1, lcn.

EAST TEXAS

Falls County: H. C. Cockburn et al's Dr. Buie 1, 660 out swc 518-ac tr, or 2950 fr swl 2375 ft fr sel, Michael Sessam sur, Smackover test, Austin chalk 1925 ft, dr 2110 ft.

Kaufman County: Ryan Consol. Pet. Corp.'s Mrs. W. D. Brown 1, 660 out nwc Matilda Reynolds sur, otd 3065 ft, will deepen to 5700 ft.

NORTH TEXAS

Archer County: Frank Wood-C. L. Abercrombie's L. L. Hudson 1, 150 snl 1200 wel blk 83, J. W. Harris sbdn, 1350-ft test.

Clay County: Humble's J. C. Haggard 1, 1980 out nwc M. D. Estavia sur A-134, 2½ mi n Wood pool, 6800-ft Ellenburger test.

Grayson County: Seitz-Comegys, Seitz-Sohio Pet. Co.'s Geo. Graham 1, 330 wel 2352 snl of n 97.42-ac of 256.54-ac tr, C. E. Findlexan sur A-403, 5000-ft test.

Montague County: A. R. Dillard's Dr. J. T. Lawson 1, 1899 n 467 w of nec of S. L. Henry tr, N. Kimbro sur A-405, 7300-ft Simpson test.

Young County: Panhandle Ref. Co.'s J. W. Cloud 1, 330 out nwc B. F. Taylor sur A-1546, 4600-ft test.

Proposal to Lease Michigan Submerged Lands Is Tabled

The Michigan Conservation Commission has tabled until its September hearing a proposal to lease 460 acres more of submerged lands in Lake Huron off the Huron County shore.

The commission's decision to keep the submerged lands off the auction list followed protests from Saginaw, Bay City and other cities, which contend that oil operations should be isolated from the Saginaw Bay and Great Lakes or closer to the waters than the accepted federal high-water mark. The commission has repeatedly stated it will not license drilling in the bay or lakes but it has approved, under a special "protective lease" other submerged lands in Lake Huron where Shell Oil Company is drilling a wildcat about 2 miles from the lake front.

Opponents to bay-shore or lake drilling contend it will increase an already serious pollution problem in the Saginaw Valley.

Indian Leases Offered

A public auction of Osage Indian oil leases will be held at Pawhuska, Oklahoma, September 12 at 1:30 p.m. Forty-three tracts on the east side and 29 tracts on the west side of Osage County, totaling 11,520 acres, will be offered. All tracts offered will be 160 acres.

SQUEAKS from the BULL WHEEL

Well, Practically None

"Gosh, baby, you mean you've never been out with a sailor? Swell! Where'll I meet you tonight?"

"How about meeting me at 2100 on the starboard side of Pier 7?"

Cause for Farewell

A prominent business man fell in love with a singer, took her out every night. But he decided that before he married her he'd better find out something about her. So he arranged through a friend to have a detective follow her around and report on her life.

Back came the report: "The lady has an excellent reputation. Her past is without a blemish. She has many pleasant friends. The only breath of scandal is that recently she's been seen in the company of a business man with a terrible reputation."

Fewer Now, Though

The lady was introducing her husband, who was largely deaf and all Republican. "Darling," said she, "this is the new deacon."

"New Dealer?" he scowled.

"No, darling, new deacon, new deacon, NEW DEACON. He's the son of the bishop."

"Yep," said Hubby, "they all are."

FIELD GEOLOGY

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Chief Geologist of the Sun Oil Company, Formerly Assistant Professor of Geology, Massachusetts Institute of Technology

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A standard and widely-used manual of geological exploration and mapping, combining both textbook and reference features, especially suitable for petroleum and mining geologists and engineers. Presents methods and keys for the recognition and interpretation of land forms and structures, and explains fully how to take and record data in the field, make and interpret maps, etc. Fully revised in line with advances in geological research and practice, with valuable new material on mass movement, flow structures and fracture systems in igneous rocks, directional drilling, use of gamma-rays in subsurface correlation, and electrical logging.

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Boulder and Boulder

Two boys and a girl were hailed into juvenile court. "What is your occupation?" asked the judge of one lad.

"I pick up pebbles on the beach," said he, and stuck to it.

The judge turned to the other boy. "And what is YOUR occupation?"

"I, too, pick up pebbles on the beach, Your Honor," said he, and would not answer otherwise.

"And you, young lady," said the angry jurist to the girl, "What is your occupation?"

"Me, Judge?" said she meekly. "Why, I'm Pebbles."

Burn 'Em Up Alive

The scene is a modern horror chamber filled with steel gadgets and instruments.

"Are the irons hot?"

"Yep."

"Is the oil boiling?"

"Yep."

"Fasten her to the chair."

"She's strapped down tight."

"Good. Now give her the $3 permanent."

Safe Way

A drunk reeled out of a saloon and bounced off a telephone pole. "Scuse, please," he muttered, and staggered exactly three steps before he tripped over a fire plug. "Sorry, li'l boy," he muttered, and rammed his head into a letter box.

He lay on the ground a moment, slightly stunned, then raised himself on an elbow. "Nuts to that! I'll jush lie here till the parade passes."

Fair Game

"That sailor is young enough to be your son. I can't see why you go out with him."

"Oh, it's just a platonic friendship—play for him and a tonic for me."

This Curious World

The ice man smiled as his glance fell upon this sign: "Please drive slowly. The child in the street may be yours."

He was so used to having things done for him that he married a widow with four children.

Definitions

Good girl: One who dreams about auto rides and then walks in her sleep.

Doughnut: Proof that two halves make a hole.

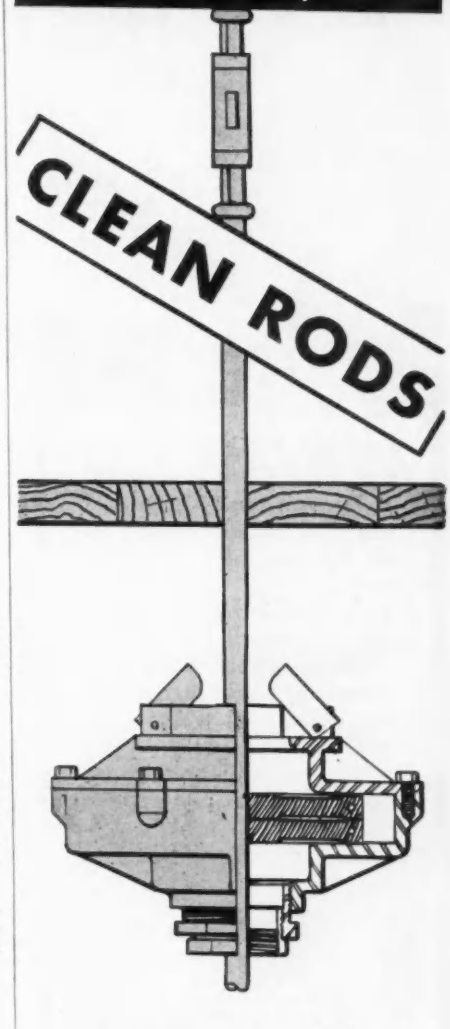
Osteopath: The only man who can handle women without losing his head.

Quickie

A high-priced playwright went to Hollywood and was given a plushy office, a salary of $5000 a week and orders to pound out a streamlined drama with religion, high society, dramatic surprise, action, and sex.

Ten minutes later he stalked into the producer's office with the finished product. The astonished producer picked up the page and read: "My God," cried the Duchess to the Bishop, "please stop pinching my leg or I'll slug you."

"Best Bet Yet"



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- Distributors located in practically all fields make replacement parts readily available.
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- F-5 TYPE has patented plunger construction to assure highest possible efficiency in this type of pump.

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MEN IN THE INDUSTRY NEWS

H. H. Power, professor of petroleum engineering at the University of Texas, has left for Caracas, Venezuela, to serve as a special consultant to the Mene Grande Oil Company (Gulf Oil Corporation associate). Power will investigate various phases of production, development, and special problems such as crude oil stabilization.

H. H. Power

C. S. Teitsworth has been made chairman of the manufacturing committee of Socony-Vacuum Oil Company, succeeding **W. F. Burt,** who has been made a vice president and member of the executive committee. Teitsworth has been vice chairman of the manufacturing committee for five years. He has been associated with Socony-Vacuum and affiliated companies for 19 years.

Clarence Leslie Williams has joined the sales engineers staff of The Foxboro Company, Foxboro, Massachusetts, and has been assigned to the northern New Jersey territory.

Frank Buttram, Oklahoma City producer and head of the Buttram Petroleum Corporation, has organized Buttram, Inc., with headquarters in the First National Bank Building, Oklahoma City. The new firm operates under a Delaware charter, and has capital stock of $240,000.

J. Harry Reynolds, Cisco, Texas, producer and manufacturer of oil field specialties, and the Hickok Producing & Development Company have incorporated their joint oil operations in West Central and West Texas as Hickok & Reynolds, Inc., with headquarters in Toledo, Ohio. Reynolds is manager of Texas operations.

Ralph J. Schilthuis, who recently resigned as assistant director of production for the Petroleum Administration for War, has returned to the Humble Oil & Refining Company as division petroleum engineer for the Southwest Texas Division, Production Department. He was supervising petroleum engineer in the Petroleum Engineering Division when he went on leave. His promotion to the post of division engineer became effective with his return to active duty with the company.

E. G. Cross has been appointed supervisor of the Production Planning and Control Department of Crocker-Wheeler Division, Joshua Hendy Iron Works at Ampere, New Jersey.

Martin A. McNulty has succeeded **C. T. Bergeson,** who resigned as comptroller of Standard Oil Company (Indiana). Bergeson has been with Standard nearly 30 years, during which he advanced from junior clerk to the top position in accounting and auditing activities. McNulty also has nearly 30 years of service, having taken a job as office boy in 1916. His promotion is from the position of assistant comptroller.

D. A. Sillers has resigned as superintendent of gas measurement for Lone Star Gas Company, to become president of Peerless Manufacturing Company, Dallas. Sillers is a graduate of Carnegie Institute of Technology and spent four years as sales engineer with The Foxboro Company before joining Lone Star Gas Company 20 years ago. He developed the gravity balance, recording gravitometer, orifice meter slide rule, and a gas cleaner for general use in the industry. He also has developed the products of Peerless Manufacturing Company, which include separators for gas and oil, steam and air; natural gas odorizers, and a valve for shutting down pumping wells.

L. A. Henry, for 13 years pilot with Standard Oil Company of Indiana, has been appointed manager of the aviation department in the company's Chicago general sales office promotion department, and **John P. Porter,** Standard's aviation salesman for nearly 20 years, has become airlines representative.

G. B. Hallman has been added to the West Texas scouting staff of Mid-Continent Petroleum Corporation with headquarters at Midland. He formerly was a deputy sheriff at Midland.

Jack Lively, former land department employe of the Standard Oil Company of Texas, has been assigned to scouting duty in West Texas with headquarters at Midland. He succeeds **George D. Echols,** who has been given a special assignment.

Hamilton M. Johnson, district superintendent for Schlumberger Oil Well Surveying Company at Ardmore, Oklahoma, will leave next month for Venezuela.

J. Steve Anderson, Jr., has been appointed service agent for the Anderson-Prichard Pipe Line Corporation and the Anderson-Prichard Refining Company, both Nevada corporations.

Major Paul R. Turnbull has returned to Humble Oil & Refining Company to serve as assistant division petroleum engineer in the Southwest Texas Division of the production department, with **Ralph Schilthuis.** Turnbull has been in the service since August, 1942. He was transferred to his recent assignment with Humble from the position of assistant district superintendent of the Flour Bluff District, which he held when he went into the Air Corps.

Ray D. Sloan, head of The Carter Oil Company's scouting and statistical division at Tulsa, has been named division geologist at Billings, Montana, succeeding **D. L. Blackstone,** who becomes associate professor of geology at the University of Missouri. **Paul C. Shea,** vice president, Colorado Beacon Oil Company, Boston, has been named acting manager of manufacturing for the company's northwest division, replacing **T. J. Landry,** who has resigned to become marketing distributor at Kalispell, Montana.

Major T. J. Fuson has returned to his post as assistant division petroleum engineer of Humble Oil & Refining Company's Gulf Coast Division after 3½ years in the Army. His headquarters will be in Houston.

Except for a special mission to the Middle East in the summer of 1944, Major Fuson had been in the India-Burma theater since going overseas in November, 1943. As technical operations officer he assisted in planning for and coordinating of construction and operations of approximately 3500 miles of military pipe line system from India into China. He returned to the states the last of June with his job completed, and was released from active duty, after having been given official commendation for outstanding performance of his duties.

R. J. Eiche and **T. G. Martin** have announced the opening of new export offices in the Petroleum Building, Los Angeles, for the handling of oil field equipment.

Morvin Thomas, who for several years has been district manager for Pittsburgh Steel Company in Chicago and also St. Louis, has resigned.

Harold B. Foxhall has resigned from the U. S. Geological Survey to become director of the division of geology of the Arkansas Resources and Development Commission.

Major Raymond C. Moore has been discharged from the Army and will shortly resume his duties as state geologist of Kansas at Lawrence, Kansas.

Andrew C. Temmel of Houston has been made manager of engineering sales-service of the National Tube Company with headquarters in Pittsburgh. **Sheldon H. Reynolds** has succeeded Temmel as field engineer for National Tube in Houston.

Roy P. Lehman, geologist for Phillips Petroleum Company at Shawnee, Oklahoma, has been transferred to Wichita, Kansas, as district manager, and will be succeeded at Shawnee by **Ed Minnis,** district geologist at Wichita.

James S. Wilson has been made manager of Plastic Equipment Sales for the Watson-Stillman Company, Roselle, New Jersey. He formerly headed the plastics molding laboratory, and before that was with the Plastics Division of General Electric Company.

Louis J. Chatten has been appointed vice president and general commercial manager of North American Philips Company, New York.

As director of radio and radar for WPB, a position which he has held since August, 1944, Chatten supervised output of U. S. radio and electronics. After Pearl Harbor he became chief engineer for the Motor Parts Company of Philadelphia. Prior to that he had been sales manager of the Dictograph Corporation, vice president and general manager for FADA Radio & Electric Corporation, and eastern regional manager for Bendix Home Appliances.

E. S. Goebel has been appointed acting director of field sales in the Communication and Electronics Division of The Galvin Manufacturing Corporation, Chicago.

Harold Kleen, geologist with Skelly Oil Company at Oklahoma City, has been named chairman of a committee to study the establishment of a central sample wash and sample library at Shawnee, Oklahoma. Other members of the committee include **J. T. Richards,** Gulf Oil Corporation; **Roy McAninch,** Stanolind Oil & Gas Company; **Curtis Hicks,** Phillips Petroleum Company; and **Dwight Smith,** Magnolia Petroleum Company.

Robert H. Gardner has been appointed general manager of sales of A. M. Byers Company, Pittsburgh. Gardner has been manager of Byers' Washington office since 1933, except for a four-year period ending in 1940 during which he was manager of the company's steel pipe sales, with headquarters in Pittsburgh. He takes over the duties of the late **Myron J. Czarnieski,** who died June 18.

H. R. Rowland was named assistant general manager of sales. Rowland joined the company's sales department in 1915. In 1925 he became manager of the Pittsburgh division, and in 1944 was named manager of hot rolled sales.

J. A. Swaton has been appointed Los Angeles district manager for steel valves for Kerotest Manufacturing Company. **J. A. Norris** is district manager, brass division. **Van D. Clothier** will continue as the southern California representative for brass valves with headquarters in Los Angeles.

W. D. Turnbull has been appointed general sales manager of Kennametal, Inc., Latrobe, Pennsylvania. He has had more than 25 years of experience in both engineering and sales of products used in diversified industries, and is holder of the Westinghouse Electric Corporation's Award of Merit for outstanding work in these fields. For four years he was vice president in charge of sales of Pomona Pump Company, Pomona, California.

John C. Sykora has been elected vice president and director of sales for Portable Products Corporation, Pittsburgh.

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The **ORBIT GEAR OPERATED MASTER VALVE** makes your Christmas Tree more compact by eliminating the use of an adapter flange — also eliminating chances for additional gasket leaks. The Unequal Flanges are cast integral with the body of the Valve.

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MEN IN THE INDUSTRY NEWS

R. R. Whitmore, Jacksonville, Florida, has been named executive vice president and general manager of Motor Fuel Carriers. Headquarters of the company are in Tampa, Florida, and other offices are maintained at Doraville, near Atlanta, Georgia; Biscayne Boulevard, Miami, Florida; the Ninth Street Garage, Panama City; and at 1243 West State Street, Jacksonville.

M. S. Biggs has been made division purchasing agent of Stanolind Oil and Gas Company with headquarters in Houston, succeeding **Carl Young,** resigned. Biggs served as assistant to Young before his promotion.

John C. Sykora has been elected vice president and director of sales for Portable Products Corporation, Pittsburgh.

Deaths

George W. Kinney, one-time executive for Gulf Oil Company and later an independent oil producer in Oklahoma, died August 16, at Tulsa. He was 68 and a native of New Freeport, Pennsylvania. He joined Gulf in 1903 and was in charge of construction of that company's first pipe line in the Glenn Pool, Oklahoma. Later he became head of the Charles Page oil interests in Sands Springs, Oklahoma. Kinney took a keen interest in sports and had a large part in building the baseball park at the Tulsa Fair Grounds. He was also a member of the Tulsa Park Board. In April, 1933, Kinney was appointed assistant state proration umpire for Oklahoma.

Lloyd Sumner Burdick, district representative for Caterpillar Tractor Company in North Dakota, Montana, Alberta and Saskatchewan, was killed August 9 when two sections of the Great Northern's transcontinental train, the Empire Builder, collided at Michigan, North Dakota.

Arthur G. Bailey, sales manager for Fred E. Cooper, distributor of oil field equipment for Allis-Chalmers Manufacturing Company, died August 18 in Tulsa. Bailey, 60, was the oldest employe with Fred E. Cooper, whom he joined in 1924. Before entering the oil equipment field he was superintendent of the old Lake Park Oil Company.

A. A. Willingham, sales manager for The Wheland Company, died August 10, in a hospital near Chattanooga, Tennessee.

Elton Phillips, retired Oklahoma oil man, died August 12 in Stillwater, Oklahoma, after an extended illness. Phillips, 68, was a native of Pennsylvania and had lived for many years in Tulsa, where he served in the production department of the old Prairie Oil & Gas Company.

Harry H. Naly, retired field superintendent for Minnehoma Oil Company, died August 15, in Cleveland, Oklahoma. Naly, 79, had worked for oil companies in Mexico and Borneo before going to Oklahoma 40 years ago.

Robert S. Ellison, former president of Stanolind Pipe Line Company, died August 17, in Manitou, Colorado. Ellison, 69, retired from Stanolind about five years ago. He was a lawyer by profession and was associated with the oil industry during the trust-busting era and the intra-industry fights. After serving in the Colorado State Legislature he moved to Casper, Wyoming, and in 1916 joined the Midwest Refining Company of which he later became vice president. He went to Tulsa in 1930 to head the Stanolind Pipe Line Company. At the time of his death he was engaged in writing a history of the West.

Thomas L. Speed, Midland, Texas, petroleum engineer and secretary-treasurer of the Permian Basin Engineers Association, was fatally injured August 18 by a gas blowout while making a check of a well in the Shafter Lake sector of West Texas. Speed, 33, was with his brother, **John M. Speed, Jr.,** and **Ralph U. Fitting** of the West Texas Engineering Service Company.

Bertrand deGraff, geologist, died in Jackson, Mississippi, August 13. A native of Colorado Springs, Colorado, he resided in Texas for many years.

Harry DeLong, 47, draftsman supervisor for Sinclair Prairie Oil Company, Tulsa, died August 20.

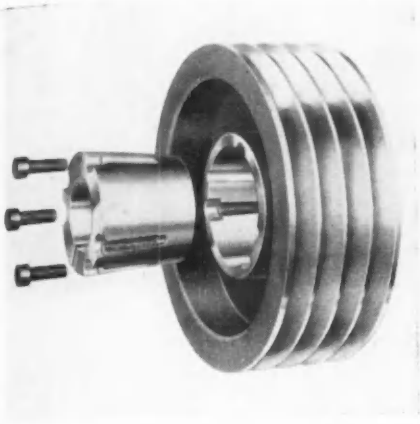
Ferdinand R. Bain, chairman of the board of directors of the Southern Counties Gas Company of California, died in Los Angeles August 13. Bain, 84, participated in the organization of the gas company in 1911. He was named chairman of the board of directors in 1928, a position which he retained until his death.

David B. Mallernee, pioneer Oklahoman and one of its most active wildcatters, died August 21, in Oklahoma City. Mallernee, 73, was credited with the discovery of the Walters pool in Cotton County and with many extensions and maintained several strings of cable tools which he supervised until ill health forced his retirement.

1—V-Belt Sheave

Dodge Manufacturing Corporation, Mishawaka, Indiana, announces the Taperlock V-Belt Sheave.

To install the sheave, it is only necessary to slip the sheave and bushing assembly onto the shaft and tighten two or three locking screws, depending upon the size of the sheave. The screws are in threaded engagement with the sheave hub and free in the bushing groove. As the screws are tightened, they push against the tapered bushing, forcing it into the tapered bored hub. This causes the bushing to contract and wedge between the hub and shaft on which it is installed.



To remove the sheave from the shaft, the locking screws are removed and one or two of them are inserted in jack screw holes, which are partially in the bushing and partially in the hub. The portion of the jack screw hole in the bushing is threaded and that in the hub portion is unthreaded. As the screws are tightened, the bushing is dewedged and the sheave is free for removal from the shaft.

This construction provides a mounting of minimum dimensions for accommodation of the screws and their connection with hub and bushing. It permits the use of a flangeless bushing and eliminates extension of hub or bushing or any collars or protruding parts. This reduces weight and facilitates mounting and demounting.

The wedging action gives the equivalent of a shrunk-on fit on the shaft whether it is standard or normally undersize. The bushing extends the entire length of the hub, providing a full bearing surface.

2—Rust Inhibitors

Carbozite Corporation, Pittsburgh, announces two new types of specialized rust inhibitors, Carbo "C," and Carbo "N." Both are recommended for rust prevention on metals during inside storage.

Carbo "C" Inhibitor is inactive on all metals and alloys, including magnesium and aluminum. Carbo "N" Inhibitor has no effect on iron, steel or ferrous alloys, although it does have a slight action on softer metals, such as lead, zinc, magnesium and aluminum.

Carbo "C" and Carbo "N" Inhibitors will successfully prevent rusting of the metal to which it is applied while in such storage, it is claimed. For proper rust prevention on metal materials in outside storage, Carbozite coatings should be used, as these new types of rust inhibitors are not impervious to rain or snow.

Carbo "C" Inhibitor and Carbo "N" Inhibitor also prevent rust in lines that drain salt solutions from crude oil storage tanks and from the bottoms of tanks where water and brine solutions are used in the manufacture of ice, where the brine corrodes and eats into pipe lines and valves very quickly. The inhibitors can be also used as a mixture with cutting oils to protect threads from rust.

Carbo "C" Inhibitor and Carbo "N" Inhibitors are distributed in concentrated form only. This method creates large transportation cost savings, as purchases can be increased by the addition of 25 to 100 gallons of water to each gallon of inhibitor.

3—Hose Coupling

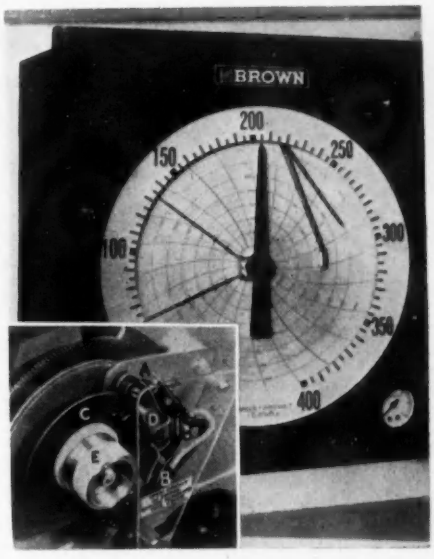
E. B. Wiggins Oil Tool Company, Los Angeles, has developed an industrial hose coupling which is built to withstand a pressure of 600 pounds per square inch. It is claimed that the water is brought under full pressure to the end of the nozzle.

The coupling is made of light aluminum and consists of two parts, including a threaded end section that applies on a standard threaded faucet and a ring-equipped section for application in the end of a length of hose. The ring is pulled back by a spring, moves axially over a set of hinged dogs, and is knurled to provide an operating grip.

Moving the ring back against the spring permits the dogs to swing open and clear a holding ring integral on the shank of the section applying on the faucet. Releasing the ring after the two coupling sections have been brought together closes the dogs inward to grip the ring and hold the assembly together.

4—Emergency Alarm

The Brown Instrument Company, Philadelphia, announces addition of a new safety emergency alarm feature to its line of electronic air-operated controllers. Designated the Brown ElectroniK Contact Controller, it provides safety alarm principles that operate automatically. It also provides on-off control in addition to air control to actuate motorized valves, solenoid valves, contactor panels, signal lights, etc.



As shown in the picture of the ElectroniK and the contact controller, contacts A and B are made or broken by the action of cam C and roller D, and the spring-loaded lever to which it is attached. The control point is set by loosening the knurled knob E and rotating cam C so that its notch corresponds to the position of the temperature pen that has been previously moved to the desired point. The pen position sounds the emergency alarm. A red pointer on the scale, not shown in the picture, indicates the temperature setting of the contact controller.

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1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

In addition to information checked above, I would like more data on products or services advertised elsewhere in this issue by _____ Company

Name _____ Title _____

Company _____

Address or P. O. Box _____

City _____ State _____

(To avoid delay print or type clearly name, company and mailing address)

5—Fire Extinguisher

Walter Kidde & Company, New York, announces that the trigger control which has distinguished smaller sizes of Kidde carbon-dioxide fire extinguishers has been extended to larger portable models. Operated with one hand, the new model

is controlled by a pull of the index finger, the largest extinguisher requiring approximately the same trigger force as the smallest. It can be latched open when desired, and easily disengaged to avoid wasting gas.

This control is the result of many years of engineering research, it was said. The objects were to provide an on-and-off control of discharge with a minimum of effort; to permit a high rate of flow of the carbon dioxide, avoiding directional changes in its passage in so far as possible; to allow easy locking-open with one hand; and to incorporate these features in a small, compact part, relatively light in weight and simple in design. These objects have been accomplished. There is only one directional change in the valve passage, avoiding loss of force and giving a full flow directly to the nozzle.

The one-piece handle closure protects the valve itself, is light in weight and fits the hand comfortably. Other improved features of the extinguisher as a whole are the permanent bushing and removable siphon tube, which allow inspection, periodic hydrostatic testing and, when necessary replacement of any part, without devalving.

The locking pin fits into a blind hole so that there is no possibility of its getting bent and jamming, and the seal wire is placed where it is least likely to be broken, and most easily observed.

The extinguisher is carried and operated with one hand, leaving the other free to manipulate the discharge nozzle.

6—Circulating Head

King Oil Tools Company, Houston, announces improvements in its King 4C Circulating Head and 4AR Wire Line Stripper. These are companion tools, but are sold separately and are not always used together.

When used together they form a very short unit and are so compact that the pipe can be raised and lowered with

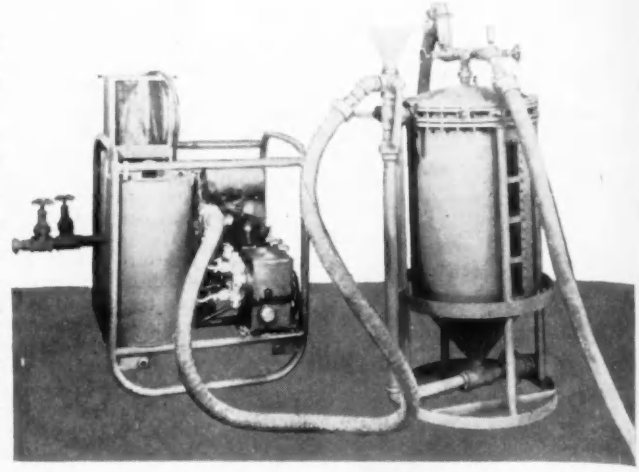
short bail elevators while in use. Used in combination, these tools are recommended for wire line coring in areas of high gas pressure.

The King Circulating Head has a 3-inch clear opening. The spindle is equipped with a tool joint pin. Any commonly used tool joint can be supplied. The top of the circulating head is threaded for 4-inch line pipe and the gooseneck has a 3-inch line pipe thread. The bearings are sealed in the housing.

7—Pumper

%Proportioneers, Inc.%, Providence, Rhode Island, 'have perfected their Pur-O-Pumper in a design for field use. It can be carried to the job on a light truck.

River or pond water is pumped through diatomaceous earth type filter for turbidity removal and is then sterilized with hypochlorite. Pure, clean water is immediately available up to 16,000 gallons a day.

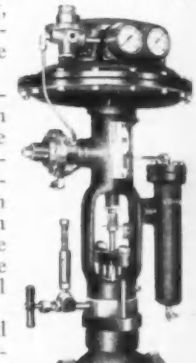


Use the Coupon

For free copies of Manufacturers' Literature or more information on products described on these pages, use the convenient mailing coupon on page 93.

8—Pressure Pilot

Fisher Governor Company, Marshalltown, Iowa, announces an addition to its line of Wizard pressure pilots, which provides snap-acting, two-position, pilot-operated pressure control.



The pilot is recommended for use on flowing or flush type wells. On such installations the controller is installed in the tubing line from the well with the controlled pressure piped from the well casing to the pilot. The same controlled pressure may be utilized as the pilot operating medium.

As gas pressure in the casing reaches the set of maximum valve, the pilot opens the main valve to the open position. The well is permitted to flow until pressure in the casing drops to the minimum valve, when the pilot snaps to the reverse position, closing the main valve and stopping the flow until pressure again builds up in the casing.

Thus the well is permitted to flow only when casing pressure is between the two predetermined maximum and minimum valves. Control is entirely automatic and is said to be entirely dependable.

The device incorporates wide adjustment of snapping ranges for all pressure condition. It is available in direct or reverse acting styles, direct diaphragm mounted or remote panel mounted type.

9—Wire Line Stripper

The King 4AR Wire Line Stripper is an automatic release type tool. It has a positive latch and a sure release. Bronze rollers guide the line, and are equipped with grease nipples for lubricating. The strippers are inserted from the sides and can be renewed while the line is in the hole. This tool is non-sparking, which lessens the fire hazard.

The wire line stripper is widely used

in swabbing and a smaller unit designated as King 3AR Wire Line Stripper is usually used for swabbing purposes.

Literature

10—Deaeration

Cochrane Corporation, Philadelphia, has published Reprint 43, "Cold Water Deaeration" which describes a deaerator for the purpose of removing oxygen and carbon dioxide from process waters used cold. It is claimed that this removal of oxygen and carbon dioxide will prevent corrosive action and thus give protection to equipments, eliminating maintenance and obsolescence.

11—Evaporative Coolers

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has published Bulletin C-1100-B27, describing Worthington evaporative coolers. The coolers are recommended for modernizing existing water-cooled installations to save water and power.

12—Cleaning

Kelite Products, Inc., Los Angeles, has issued a folder, "Easier Cleaning for The Petroleum Industry thru Kelite pH Control." All types of cleaning from the drilling rig to the refinery are discussed.

13—Hydraulic Press

Rodgers Hydraulic Incorporated, St. Louis Park, Minneapolis, has published a catalog describing the Rodgers universal hydraulic press for use where there is a need for pulling, pressing or lifting power. The device is portable, light in weight, and will develop up to 200 tons pressure. Suggested applications in the oil industry include pipe straightening, bending, drill pipe and kelly straightening, and special pushing and pulling operations such as alignment of foundations, etc. The press may be used in any position, vertical, horizontal, or at any angle.

14—Filters

Cuno Engineering Corporation, Meriden, Connecticut, has published a bulletin describing the Cuno continuously cleanable filters, which, it is claimed, will handle anything that can be pumped.

15—Gas Purifiers

Carbide and Carbon Chemicals Corporation Unit of Union Carbide and Carbon Corporation, New York, announces that facilities for increased production of monoethanolamine and diethanolamine have been completed recently. These chemicals are used in gas purification, and as emulsifying agents. As mild bases they combine directly with acids and acid gases and are useful for removing acid gases from natural gas and crude hydrogen.

Minneapolis-Honeywell Makes Executive Personnel Changes

Minneapolis-Honeywell Regulator Company, Minneapolis, Minnesota, announces a number of personnel changes in the Brown Instrument Company, a subsidiary, and in its own organization.

Henry F. Dever has been named president of Brown. E. B. Evleth, general manager, has resigned because of ill health. W. J. McGoldrick has been given supervision of all engineering activities of the Minneapolis-Honeywell Company. Charles B. Sweatt, former president of Brown, will henceforth devote all his attention to sales activities of the Honeywell organization and subsidiaries, as a vice president and director.

Dever joined Honeywell as a sales engineer in 1931. He formerly was employed by the Underwriters Laboratories in Chicago, the Absolute Con-Tac-Tor Corporation of Elkhart, Indiana, and the Time-O-Stat Company. In 1936, Dever was appointed branch manager of Honeywell in Philadelphia and was made vice president in charge of engineering in 1939.

McGoldrick joined Honeywell in 1935 as a member of the engineering department. In 1941 he was made vice president in charge of aeronautical engineering.

Cooper Branch Formed

Certified Alloy Valve Company has been formed as a new division of The Cooper Alloy Foundry Company, Hillside, New Jersey. The new company will specialize in the manufacture of stainless steel valves. P. C. Shaffer is chief engineer. Products will be sold through Cooper.

Win E Award

The Army-Navy E Award has been awarded the Dobbs Ferry and Mount Vernon, New York, plants of North American Philips Company, Inc., for wartime production of quartz oscillator plates, electronic tubes and equipment, and X-ray equipment.

This Signature

C Jim Stewart & Stevenson
ENGINE DIVISION—4516 HARRISBURG BLVD.—HOUSTON 3, TEXAS

means
—Accurate Analysis,
—Dependable Solution,
—Life-long Responsibility,
for your

Power Problems

All your problems are dependably solved when the Engine Division of C. Jim Stewart and Stevenson takes over the job of power supply.

HERE'S HOW!

YOU specify certain power, electrical or mechanical, to be delivered at a given place and at a given time. WE take it from there.

You get a TURNKEY INSTALLATION that's guaranteed to perform as specified. You are certain of PROPER MAINTENANCE and FUTURE SERVICING of your equipment, because C. Jim Stewart and Stevenson always has on hand a complete stock of PARTS great enough to build any engine sold and a staff of SERVICE ENGINEERS available twenty-four hours a day.

★ GM Diesel Engines
★ Red Seal Continental Engines
★ Generator Sets
★ Mobile Power Stations
★ Engine Driven Welders

C Jim Stewart & Stevenson
ENGINE DIVISION—4516 HARRISBURG BLVD.—HOUSTON 3, TEXAS

Restore Collapsed Casing with the Eastman CASING ROLLER

★ The smooth and continuous rolling action of the hardened steel roller pins efficiently and economically "does the job" in a minimum of time and without excessive friction, vibration or hammering which may damage casing.

In diameters from 3½" to 17⅜". Write or phone for complete specifications, or prompt field service.

Eastman
OIL WELL SURVEY SERVICE
Dallas, Texas Denver, Colo. Long Beach, Calif.
Houston, Lafayette, Okla. City, Bakersfield, Ventura, Casper
Export Office, 2895 Long Beach Blvd., Long Beach, Calif.

Increase RESERVES AND PROFITS BY Secondary Recovery

EXPERIENCED PRACTICAL CONSULTING REPRESSURING AND WATER FLOODING PRODUCTION ENGINEERING SERVICE

- Preliminary Surveys
- Gas Measurements
- Bottom Hole Pressure
- Compressor Plants
- Installation
- Water Treating Plants
- Core Analysis
- Estimate of Results
- Valuations
- Supervision

PETROLEUM ENGINEERS
CABLE & STINE
WICHITA FALLS, TEXAS

Plant Expanded

Expansion of the manufacturing facilities of Engineering Laboratories, Inc., Tulsa, to take in most of the block on which the plant is located, has been announced by W. G. Green, president of the company. The structure 100 by 140 feet will be of modern design, including glass brick to insure adequate lighting and air conditioning and is expected to be ready for occupancy by October 1.

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When it's PACKING be sure to SPECIFY QUAKER PACKINGS

If your equipment is new or old—regardless of type—there's a Quaker packing designed to do the job.

Get lowest cost per hour service on equipment for air, water, steam, oil and chemicals. Get in touch with our Packing experts on your problems—save time—avoid costly shutdowns.

For information—help—service —specify Quaker on any of your rubber requirements.

Belting • Packings • Hose

"If there is a way to get it done . . . QUAKER will do it"

WRITE
WIRE
ORDERS

Consult Pages 2505 and 2506 in The Composite Catalog

QUAKER RUBBER CORPORATION
PHILADELPHIA 24, PENNA.
New York 7 • Cleveland 15 • Chicago 16 • Houston 1
Western Territory
QUAKER PACIFIC RUBBER COMPANY
SAN FRANCISCO • LOS ANGELES

BE SURE TO CHECK THE
TRADING POST SECTION
ON PAGE 87 OF THIS ISSUE

Forging Ahead For the American Victory

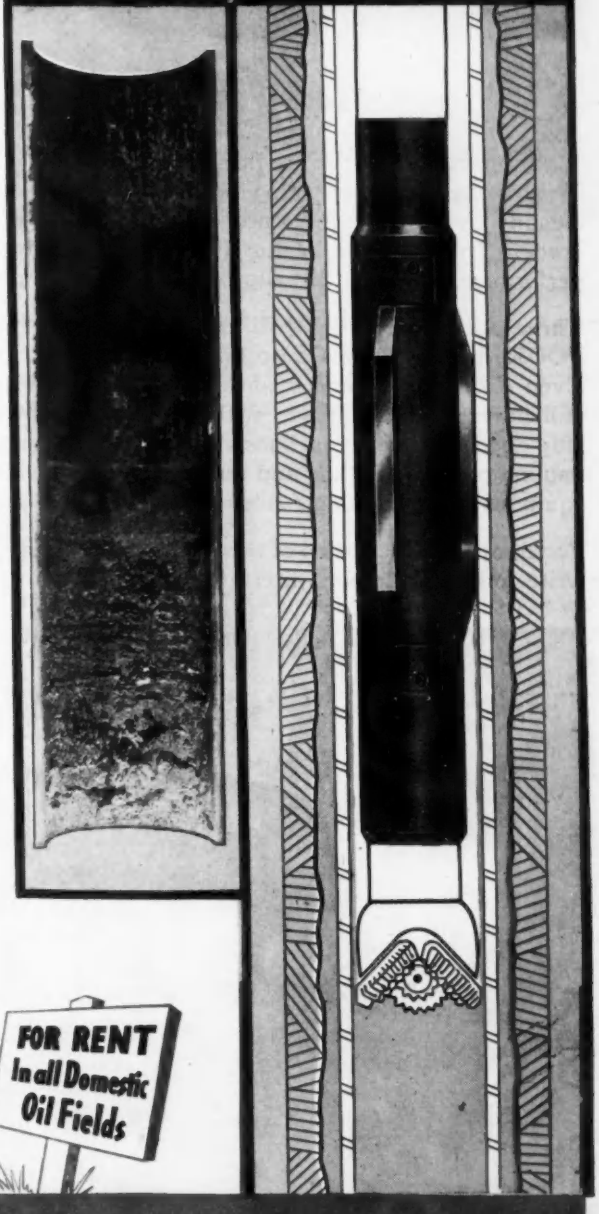
OIL CITY BRASS WORKS
Founders • MANUFACTURERS • *Machinists*
Beaumont, Texas, U. S. A.

HERE'S PROOF

that No Well is Properly Completed until the Casing has been Scraped

This casing is from a well that never was properly completed

See how it could have been done with a *BAKER* Casing Scraper



If you have ever been "all burned up" because a packer or swab would not pack off—or a cement retainer set prematurely and could not be lowered past a certain point in the casing or liner—you probably were confronted with the condition pictured at the right.

Here is a section of liner which was split to determine the reason for premature setting of a cement retainer. The reason is obvious and this photograph also reveals why packer or retainer slips will not hold properly because they become packed with cement or mud that is clinging to the walls of the pipe.

BAKER ROTARY CASING SCRAPERS should be run behind the bit every time you drill out cement, to completely remove the sheath of cement left by the bit—to remove the burrs left from gun-shot holes—to remove any scale from the "working surface" of your casing, leaving it clean and smooth to its full I.D. It is just that easy to KNOW that all future down-hole work can be performed safely and quickly, with no damage to packer or swab rubbers—to KNOW that no obstructions remain to interfere with later production or remedial operations.

YOUR DRILLING CREWS RUN IT

The time to use a Baker Rotary Casing Scraper is while the equipment is still up and the crew is on hand. No extra run is necessary if you run the Casing Scraper as a "follow-up" to the bit when drilling out cement—no service man is required.

For complete information ask any Baker representative, or look for Product No. 620 on Page 357 of your Baker (or Composite) Catalog.

BAKER OIL TOOLS, INC.

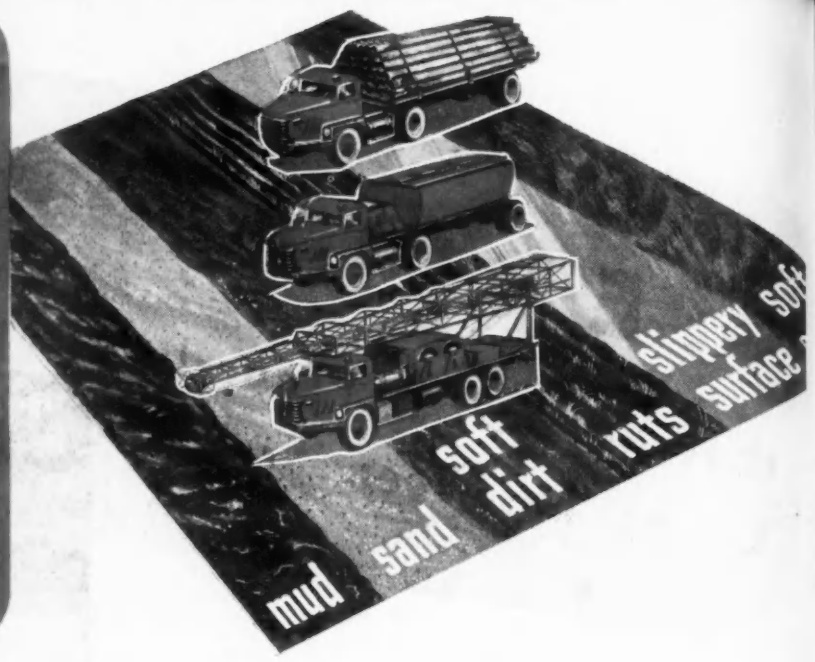
Houston — Los Angeles — New York

FOR RENT In all Domestic Oil Fields

REASONABLE RENTAL RATES • YOUR CREWS CAN RUN IT SUCCESSFULLY

BAKER Rotary Casing Scraper

A WALTER'S JOB Begins WHEN THE ROAD Ends!



Tremendous Power-Plus-Traction for Gruelling, Off-the-Road Hauling!

Walter Tractor Trucks are not designed for paved highway hauling. They make their *best* showing when heavy loads must be hauled steadily over mud, sand, ruts, soft dirt, slippery surfaces and steep grades. The exclusive Walter Four-Point Positive Drive makes this performance possible by supplying unequaled power and traction.

Three automatic locking differentials deliver full motor power to FOUR driving wheels according to their traction at any instant. Even if only one wheel maintains traction, Walter Tractor Trucks still move steadily ahead—without wheel-spinning, stalling or bogging-down. Result: you boost operating efficiency and cut costs in hauling portable drilling and servicing rigs, pipeline and maintenance equipment—by making *faster* trips without interruptions!

For complete description of these and many other Walter advantages, write today for detailed literature.

WALTER HIGH SPOTS

- Fully-rated motors up to 300 h.p.
- Instantly responsive airbrakes, hydraulic steering.
- Tractor type transmission with greater gear capacity.
- Suspended Double Reduction Drive provides higher ground clearance, reduces unsprung weight, saves tires by retarding bouncing.
- Cab forward design permits scientific distribution of weight to obtain fullest traction.

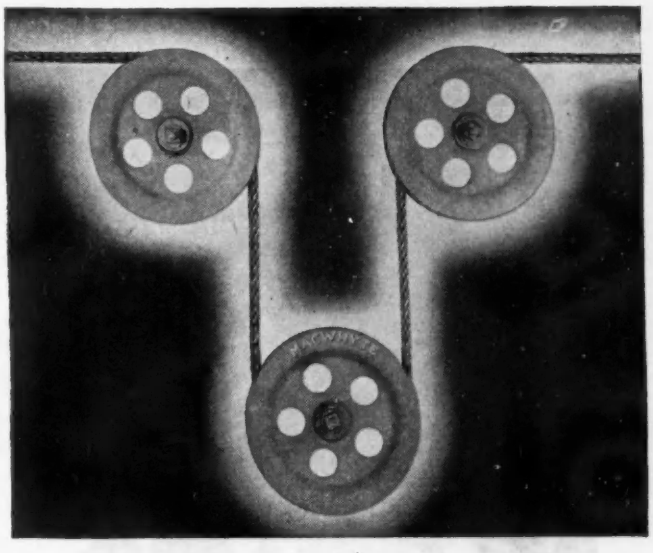
WALTER MOTOR TRUCK COMPANY
1001-19 Irving Ave., Ridgewood 27,
Queens, L. I., N. Y.

WALTER
TRACTOR TRUCKS

THE OIL WEEKLY, published every Monday. Entered as second class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

Recommended for these extra-tough jobs!

MACWHYTE PREformed WIRE ROPE



Macwhyte PREformed Wire Rope gives excellent service on the following installations:

EXCAVATING:

Load Lines on all types of portable excavating machinery such as:
Shovels
Clamshell Cranes
Pull Stroke Shovels
Draglines
Backfillers
Pile Drivers
Scrapers—Scraper Loaders

MINING:

Hoist, Slope, or Incline Ropes
Mining machine ropes
Non-spinning ropes for shaft sinking and shaft hoists

DRILLING:

Rotary oil well drilling lines

QUARRYING:

Derrick Main Falls
Whip Ropes
Slings

LOGGING:

Choker Ropes
Haulback Lines
Main Lines
Skidding Lines
Receding Lines
Loading Lines

GENERAL:

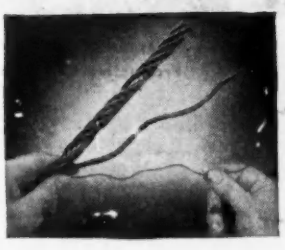
All Lang Lay Ropes
All 18 x 7 Kilindo Non-rotating Ropes
Elevator Ropes
Industrial Ropes

Send for booklet 43-85 "Wire Rope Conservation Bulletins" illustrating and describing many factors affecting wire rope service.

The correct rope for your equipment

Twenty years of service has proved that because it is more flexible, Macwhyte PREformed Wire Rope gives superior service on equipment requiring a great amount of bending over sheaves, particularly at high speeds. Macwhyte PREformed also stands up better under heavy loading and continuous operation.

Because it lasts longer, Macwhyte PREformed costs less in the long run.



HERE'S WHY Macwhyte PREformed lasts longer. Each wire and strand is PREformed to the exact helical shape it assumes in the finished rope. This reduces internal stresses, greatly increases flexibility.

Keep asking for MACWHYTE PREformed!

The demands of our armed services are so great now, there may be times when we cannot give you our usual prompt service and delivery. The situation changes from day to day, so please keep sending us your inquiries.

MACWHYTE COMPANY

Wire Rope Manufacturers

ARMY E NAVY

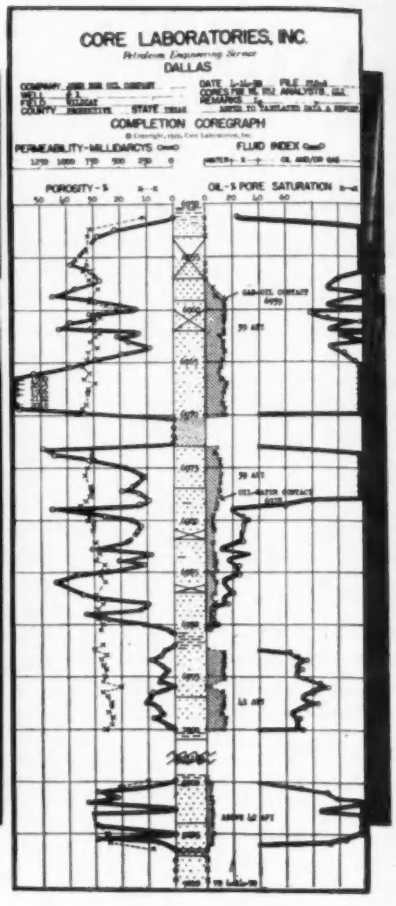
NO. 804

2933 FOURTEENTH AVENUE KENOSHA, WISCONSIN

Mill Depots: New York • Pittsburgh • Chicago • Fort Worth • Portland • Seattle • San Francisco. Distributors throughout the U.S.A.

MACWHYTE PREformed and Internally Lubricated Wire Rope
MONARCH WHYTE STRAND Wire Rope
MACWHYTE Special Traction Elevator Rope
MACWHYTE Braided Wire Rope Slings
MACWHYTE Aircraft Cables and Tie-Rods
MACWHYTE Stainless Steel Wire Rope
MACWHYTE Monel Metal Wire Rope

Petroleum Reservoir Services for Primary and Secondary Recovery



Graphic Log Prepared at Well Productive Characteristics Disclose

CORE LABORATORIES, Inc., Offers:

Core analysis with portable field laboratories.

Bottom-hole sampling and analysis.

Bottom-hole pressure tests: static and flowing.

Comprehensive studies of petroleum reservoirs.

CORE LABORATORIES, Inc.

Petroleum Reservoir Engineering

DALLAS 5, TEXAS

SERVING PRINCIPAL OIL AREAS

Unquestionably

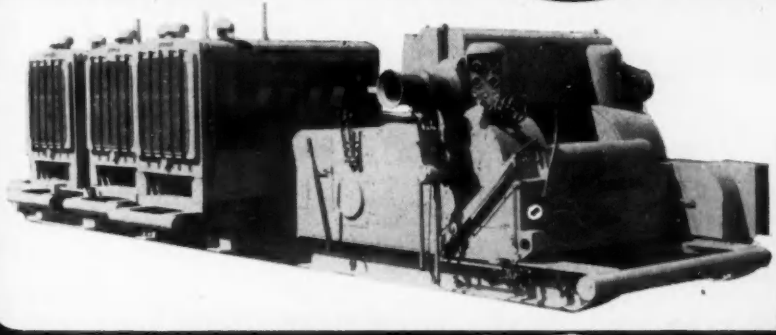
"the *Best* ENGINEERED POWER RIG"

"the *Best* QUALITY MATERIAL IN ANY POWER RIG"

"the *Best* QUALITY OF WORKMANSHIP OF ANY POWER RIG"

WILSON POWER RIG

The above are quotations of a prominent engineer with a major oil company who made a personal investigation to determine "what was what" in power rigs. We quote this engineer because we, too, firmly believe that Wilson Rigs *take the lead* in all the important features demanded of a power rig. The hundreds of Wilson Rigs in use the world over, earning more money for operators through increased efficiency and economical performance, are visual evidence of Wilson leadership. IF YOU too, want the "best" in a rig, don't buy until you investigate the WILSON.



Wilson sets the Pace!

Wilson

EXPORT REPRESENTATIVE - GUY E. DANIELS - 30 ROCKEFELLER PLAZA - NEW YORK CITY

PACIFIC COAST DISTRIBUTOR - H & B SALES CO., LTD. - LONG BEACH CALIFORNIA

UNITED PIPE & SUPPLY CORP. - 1542 HANSFORD ST. - CHARLESTON WEST VIRGINIA

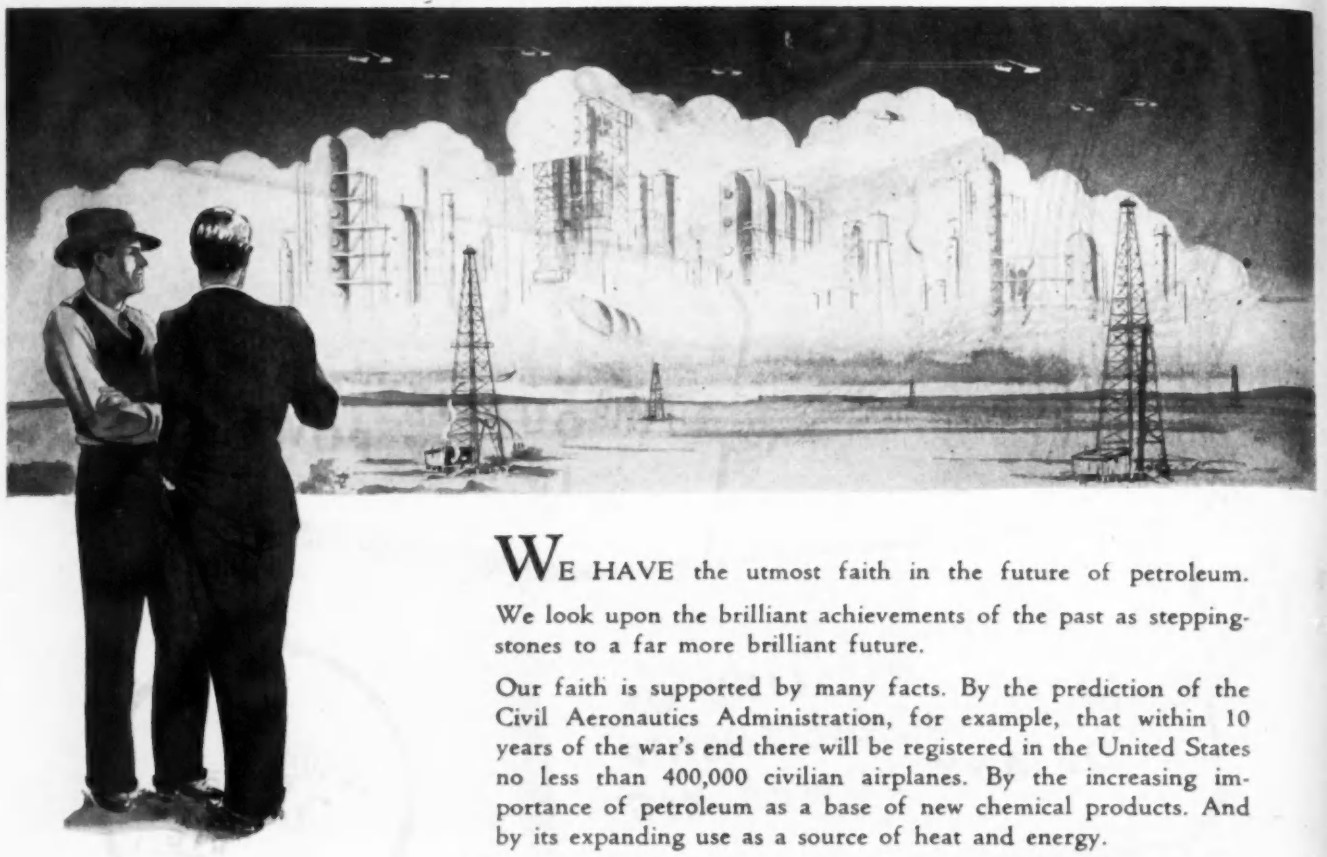
WILSON RIGS AND WINCHES may be purchased from the following: BOVAIRD SUPPLY CO., JONES & LAUGHLIN CO., MID-CONTINENT SUPPLY CO., THE INDUSTRIAL SUPPLY CO., and other recognized supply companies.

MANUFACTURING CO., INC.

WICHITA FALLS, TEXAS

We see eye to eye with Oil Men

...AND OUR EYES ARE DIRECTED UPWARD



WE HAVE the utmost faith in the future of petroleum. We look upon the brilliant achievements of the past as stepping-stones to a far more brilliant future.

Our faith is supported by many facts. By the prediction of the Civil Aeronautics Administration, for example, that within 10 years of the war's end there will be registered in the United States no less than 400,000 civilian airplanes. By the increasing importance of petroleum as a base of new chemical products. And by its expanding use as a source of heat and energy.

But our faith goes deeper than statistics. It stems from the fact that we are located in the oil country, have close contact with oil men, and know their courage, initiative and caliber.

When you understand our attitude on petroleum, you also understand our special interest in petroleum accounts. You understand, too, why our list of such accounts is growing so rapidly. For when a bank sees eye to eye with its client, the relationship is likely to be pleasant, successful and permanent.

We welcome the opportunity of cooperating with you in working out the details of current or contemplated operations in the field of petroleum production, refining or marketing.

THE SECOND NATIONAL BANK OF HOUSTON

MEMBER OF THE FEDERAL DEPOSIT INSURANCE CORP

LOCATED IN THE CENTER OF HOUSTON

YOU DON'T HAVE TO WAIT *for*

field proven

AMERICAN

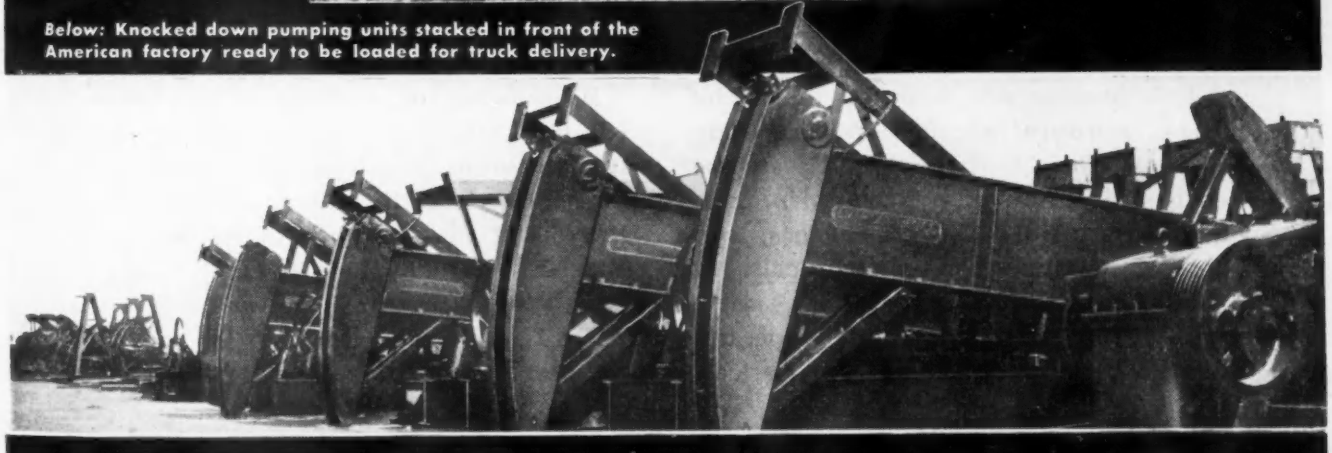
PUMPING UNITS

More than 10 years ago we saw the need for an economical pumping unit that would operate over long periods with the least possible amount of servicing... and so American Units were designed to meet that need... based on actual field experience of men who operate and maintain units. As a result, today's American Pumping Units bring a new standard for performance and long life. There are six types of American Pumping Units available immediately in all sizes.

Check these *American features:*

All rig bearings designed to lubricate more effectively • Alloy steel shafts, gears and pinions • Walking beam carefully fabricated for strength ...resistance to fatigue • Mule head easily removed for quick servicing • Reduction gear designed to permit turning gears and pinions over and placing load wear on opposite faces of teeth • High and intermediate speed shaft mounted on oversize Hyatt "wide" type solid roller bearings • Gear boxes interchangeable on same foundation bolt settings • Conservatively loaded roller pitman bearings.

Below: Knocked down pumping units stacked in front of the American factory ready to be loaded for truck delivery.

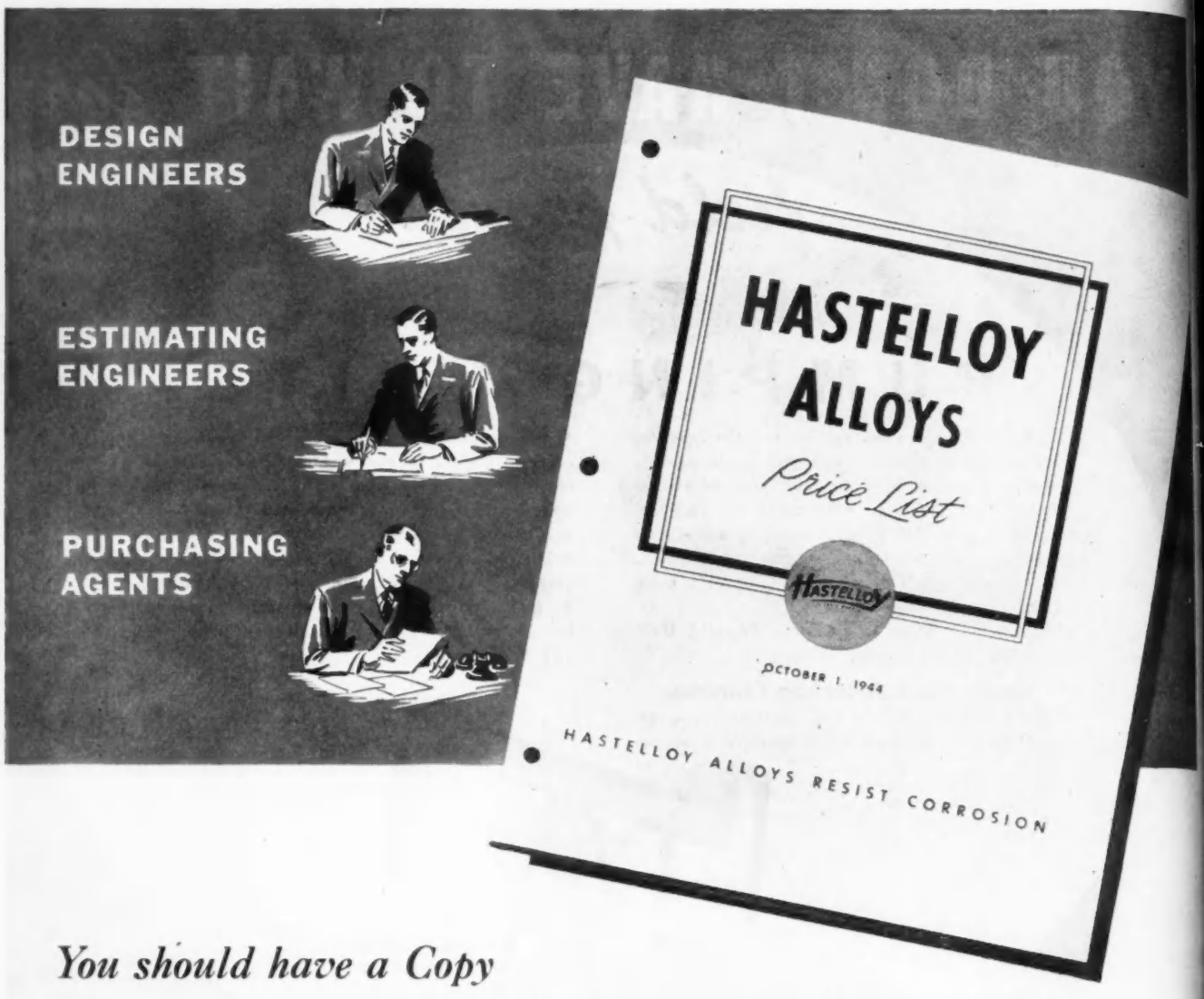


American Manufacturing Co. of Texas

ODESSA — **FORT WORTH 1, TEXAS** — KILGORE

Unit Pumpers • *Pumping Jacks* • *Swings* • *Crown Blocks* • *Bull Plugs*
Swaged Nipples • *Casing Nipples* • *Tubing Nipples* • *Braden Heads* • *Turnbuckles*

★ ★ ★ SINCE 1924 ★ ★ ★



You should have a Copy of this 24-Page Catalogue of the available Forms and Prices of HASTELLOY Alloys

• This booklet will help you make the most economical use of HASTELLOY Alloys...alloys that resist effectively the corrosive action of hydrochloric acid, sulphuric acid, oxidizing agents, wet chlorine, and many other chemicals. All the available forms of these alloys—castings, welding rods, sheets, plates, pipe, and many others—are listed with their prices.

Write today for your copy of this helpful booklet. And, if you would like further information on the properties, forms, fabrication, and applications of HASTELLOY Alloys, ask also for the 40-page booklet, "Hastelloy High-Strength Nickel-Base Alloys for Corrosion Resistance."

BUY UNITED STATES WAR BONDS AND STAMPS

HASTELLOY TRADE-MARK

HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

General Office and Works UCC Kokomo, Indiana

Chicago—Cleveland—Detroit—Houston—Los Angeles—New York—San Francisco—Tulsa

ARMY E NAVY

HIGH-STRENGTH NICKEL-BASE ALLOYS FOR CORROSION RESISTANCE

The word "Hastelloy" is a registered trade-mark of Haynes Stellite Company.

REFLECTING A WORLD OF SATISFACTION

Axelson SEATS AND BALLS

★

DISTRIBUTORS

Jones & Laughlin Supply Company • Great Northern Tool and Supply Company
C. C. McDermond, Apartado 331, Maracaibo, Venezuela • Industrial Agencies, Ltd., San Fernando, Trinidad, B.W.I.

AXELSON Seats and Balls have been the standard of quality in deep well plunger pumps for half a century. Seats—precision manufactured to exact tolerances—are reversible, offering double service life to the operator. Balls are "lapped" in and vacuum tested to guarantee a correct fit to each individual seat. Protectively wrapped and packaged together, you get the right ball with the right seat every time.

When you break the seal on an AXELSON Seat and Ball carton you're opening up a world of satisfaction and better service life for your deep well pumps • Send for 98-page catalog with all information on pumps.

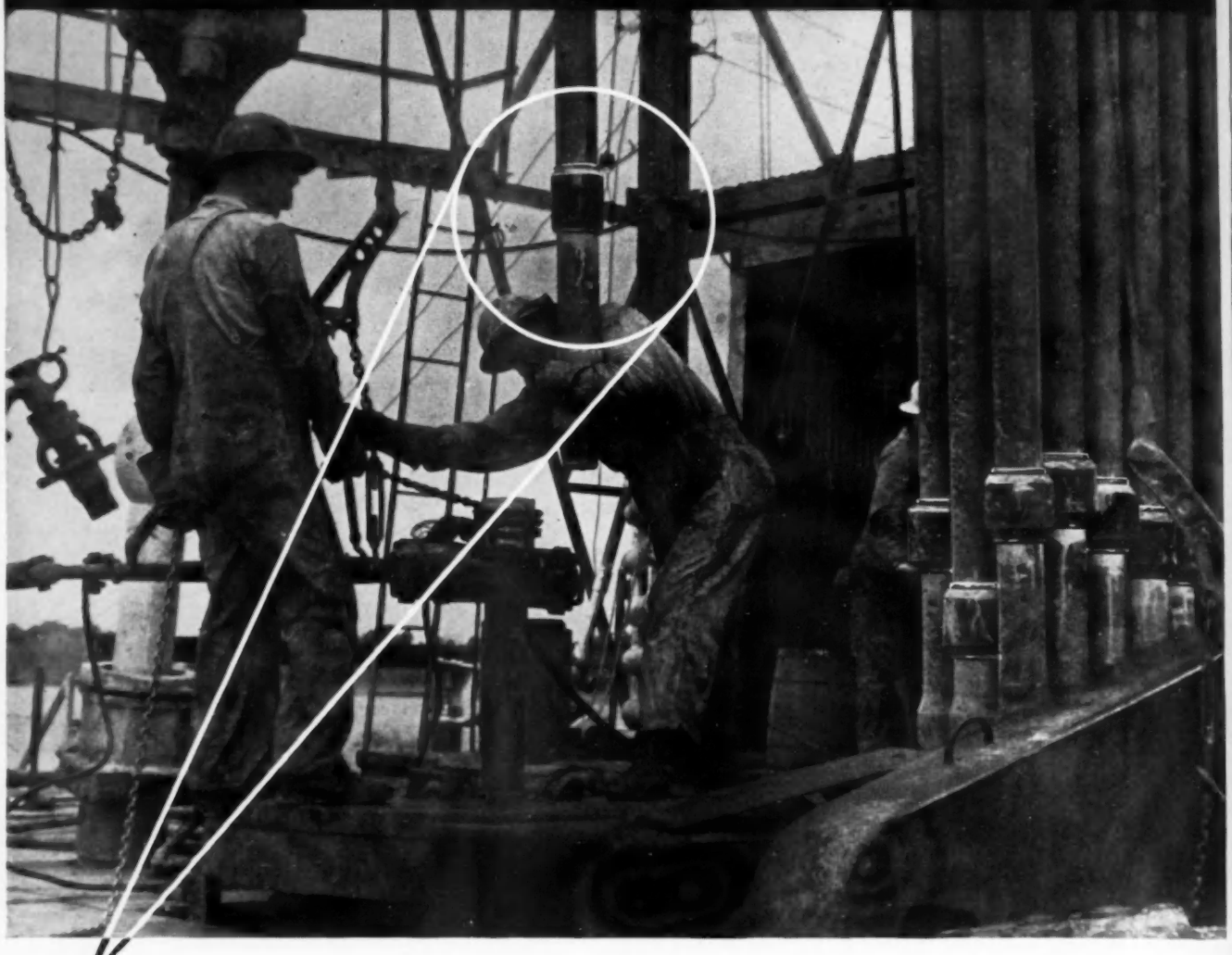
ARMY NAVY

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

AXELSON MANUFACTURING COMPANY

PLANTS—6160 South Boyle Avenue (Post Office Box 98, Vernon Station), Los Angeles 11, California • 3844 Walsh Street, St. Louis 16, Missouri • OFFICES—50 Church Street, New York City 7, New York • National Bank of Tulsa Building, Tulsa 1, Oklahoma • Avda Pte. R. Saenz Pena 832, Buenos Aires, Argentina.

CASING PROTECTORS • STABILIZERS • PIPE WIPERS • WIRE LINE GUIDES • WIRE LINE WIPERS • KELLY WIPERS
KELLY SUB PROTECTORS • MUD GUNS • MUD GUN NOZZLES • SWIVEL BAIL BUMPERS • DEAD LINE STABILIZERS
TRAVELING BLOCK BUMPERS • TUBING PROTECTORS • SUCKER ROD WIPERS • TUBING WIPERS



Smart Application . . .

CORRECTLY APPLIED TO POINT-OF-NEED

Smart application—in our opinion, is installing a Patterson-Ballagh Casing Protector on every joint of your drill pipe. Since new drill pipe is practically impossible to buy today, protecting your present string is a "must" of the first magnitude.

Even *one* unprotected joint may cause casing wear and later trouble. It does not pay to take the chance, as the cost of these useful devices are reasonable, and their life long. The lips give you greater gripping power, and streamline the drill pipe. PBX Synthetic Rubber, now in its third big year, resists oil, water, mud, abrasion, and weather.

Yes indeed, using Patterson-Ballagh's Synthetic Rubber Lipped Casing Protectors at every joint on your drill pipe is, *smart application.*

Call or drop a card to your nearest Patterson-Ballagh office.

PATTERSON-BALLAGH
PROTECTORS
Now Made of PBX Synthetic Rubber—Oil and Weather Resistant

"Best Bet Yet"

PATTERSON-BALLAGH
LOS ANGELES 1 • HOUSTON 10 • NEW YORK 6

HOT
AND HOW!

CEMENT—'small change' in a well's total cost—protects the entire investment. That is why we PRE-TEST the performance of Lone Star Cements. Example—tests for strength after exposure to temperatures up to 200° F.

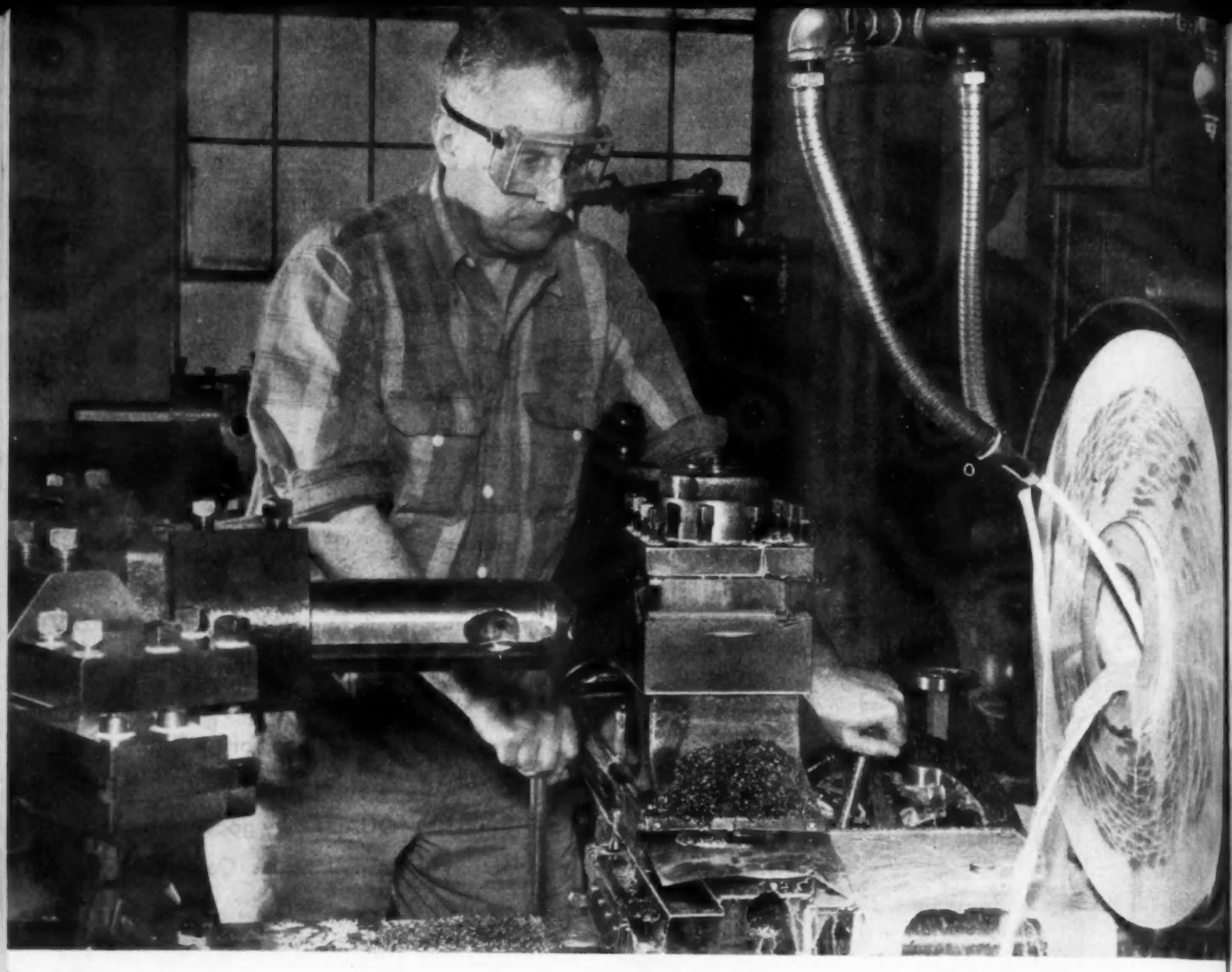
PRE-TESTED QUALITY—good reason for insisting on these Oil Man's Cements. Select the one that fits your well:

'STARCOR'* for deep wells, high strength, extra sulphate resistance. 'TEXCOR'* for deepest wells, high strength and extra sulphate resistance. 'INCOR'* for moderate-depth wells, earlier drill-out. LONE STAR CEMENT for all-around oil-field dependability. Continuing Oil-Well Cement Laboratory Research assures outstanding performance, today and tomorrow.

*Reg. U.S. Pat. Off.

HOT—AND HOW! Tests for strength after exposure to temperatures up to 200° F. for varying periods—one of the ways we PRE-TEST performance of Lone Star Cements.

LONE STAR CEMENT CORPORATION • DALLAS • HOUSTON



SPEED UP THE MACHINING CYCLE

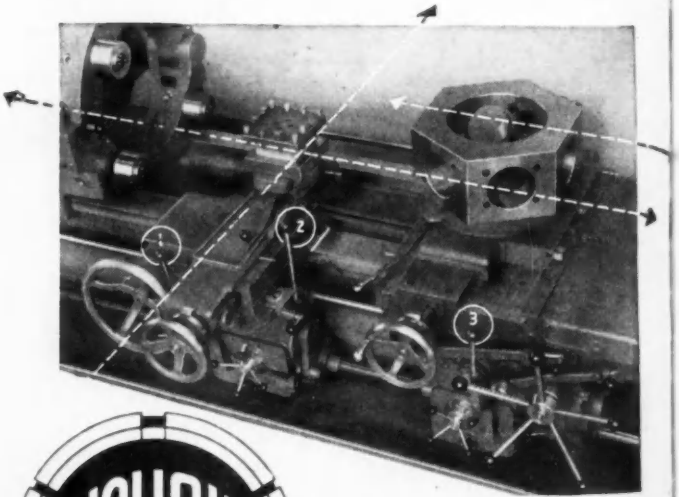
WITH 3-WAY POWER RAPID TRAVERSE . . .

AN EXCLUSIVE GISHOLT ADVANTAGE

THERE is less time lag between cutting operations with a Gisholt Turret Lathe—thanks to this outstanding feature.

Gisholt provides power rapid traverse in all 3 ways—for longitudinal travel of *both* the square and hexagon turret, as well as for the in-and-out movement of the cross slide. Traverses may be operated simultaneously or independently in either direction. Tools move more quickly in and out of cutting position—save time and operating effort to speed up production.

This 3-way combination of power rapid traverses, standard on all Gisholt Saddle Type Turret Lathes, is another exclusive Gisholt feature that makes for swifter, lower-cost production and wins favor among operators wherever it is used.



The photo above shows operating controls for: 1. Longitudinal traverse of the square turret; 2. Cross traverse of cross slide; 3. Longitudinal traverse of the hexagon turret.

Gisholt's complete power rapid traverse is only one of many advanced features which speed up production and cut costs.

GISHOLT MACHINE COMPANY

73 East Washington Ave. • Madison 3, Wisconsin

Look Ahead . . . Keep Ahead . . . With Gisholt Improvements in Metal Turning

TURRET LATHES • AUTOMATIC LATHES • BALANCING MACHINES • SPECIAL MACHINES

CURVES with straight pipe Save Time on the job

Many Field Bends and "Specials" Eliminated with Dressers

Because Dresser Couplings permit approximately 4 degrees of deflection from pipe section to pipe section (from 10° for small diameter pipe to ½° for very large diameter pipe), it is possible to build moderate curves in a pipeline without resorting to pipe bending in the field.

Obstacles such as rock strata, buildings, poles and ground elevations need not delay pipeline construction. Special surveys, to avoid trouble at these points, are unnecessary.

None of the other Dresser advantages are sacrificed in building a curve in this manner. Dresser Couplings can be installed with the same speed, and assurance of no leakage, that is possible with straight-line building. No skilled workmen are required for any Dresser Coupling installation.

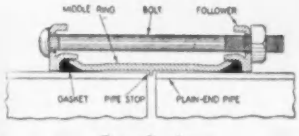
From 65 years of experience with all types of pipelines, Dresser has accumulated one of the most complete sets of pipeline data in the world . . . to help you build pipelines. Send us your inquiry on any pipe joining problem.

★ ★ ★

DRESSER MANUFACTURING DIVISION
Bradford, Pennsylvania
In Texas: 1121 Rothwell St., Sec. 16, Houston, Texas.
In Canada: Dresser Manufacturing Co., Ltd., 60 Front Street, West, Toronto, Ontario.

DRESSER COUPLINGS for maximum joint flexibility

Style 38

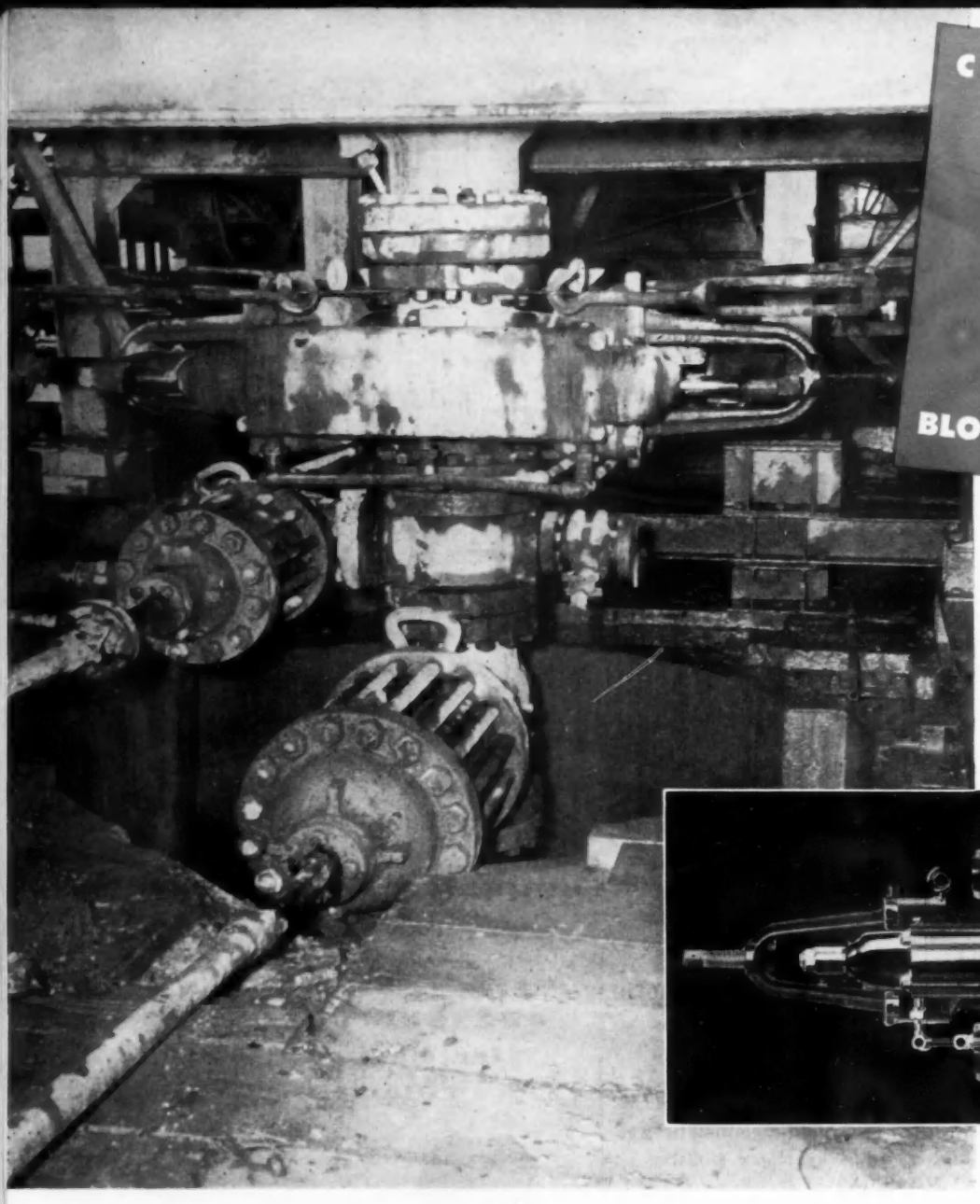


Cross Section

Dresser Couplings are simply installed . . . and easily salvaged for new lines. Two resilient gaskets held in compression, grip pipe tightly . . . but also permit considerable latitude in pipe deflection to permit building curved pipelines. This flexibility also permits expansion and contraction of pipe sections without setting up harmful stresses . . . the key to the decades of service with practically no maintenance so characteristic of Dresser-coupled pipelines.

DRESSER
ONE OF THE DRESSER INDUSTRIES

COUPLINGS for Plain-End Pipe

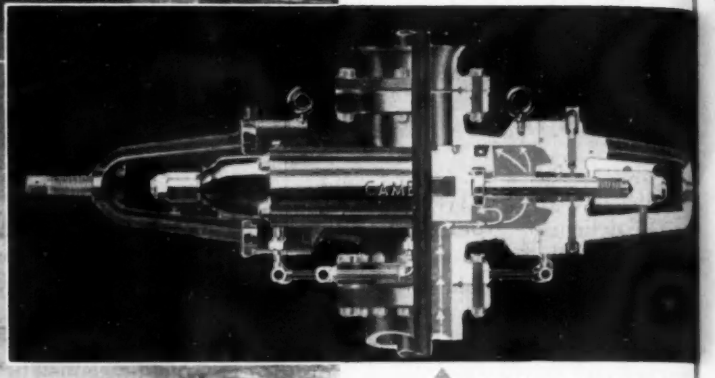


CAMERON TYPE

"QRC"

BLOWOUT PREVENTERS

CONQUER WELL PRESSURE AND *PUT IT TO WORK*



WELL PRESSURE

Pressure By-Pass Below Rams Is Powerful Closing Aid

Here is an under-the-floor view that is fast becoming a familiar scene in the field . . . a Cameron Pressure-Operated Drilling Control hook-up assembled around the new Cameron Type "QRC" Blowout Preventer. With Cameron Type "DV" Pressure-Operated Gate Valves to guard against loss of control while pipe is out of the hole, or thru the flowline, the "QRC" Blowout Preventer contributes the final measure of protection required to close the well bore during drilling operations.

The above cross-section illustration clearly demonstrates one of the outstanding features of this drilling control unit . . . the use of well pressure in closing the rams and maintaining the seal. It is this feature that accounts for the high ratio of closing pressure to well pressure, 8 to 1 as compared to 3 to 1 on earlier models. When the rams are closed, well pressure will automatically hold them in that position until the ram locking screws are made up.

The rams of the Type "QRC" Blowout Preventer can be changed with remarkable ease . . . in only a few minutes. The change requires only the loosening of four hammer lug nuts on each bonnet, turning a pressure control valve to "open" position and lifting straight up on the rams with a catline. These operations in reverse order complete the ram change. An experienced crew can make the change in 5 minutes, and even inexperienced crews should be able to do the job in 15 or 20 minutes.

In addition to these and other entirely new mechanical features, the Cameron Type "QRC" Pressure-Operated Blowout Preventer makes generous use of the numerous proven features of earlier Cameron models, including the famous Cameron patented self-feeding ram packing element.

Complete details will gladly be sent to interested operators on request.

CAMERON IRON WORKS, INC.

711 MILBY ST., HOUSTON, TEXAS

Export: 74 Trinity Place, New York, N. Y. *California:* Howard Supply Co., Los Angeles. *Rocky Mountain:* Mountain Sales & Service, Casper, Wyoming. *Oklahoma:* 310 Thompson Bldg., Tulsa

THE Versatile RODGERS SHOP PRESS

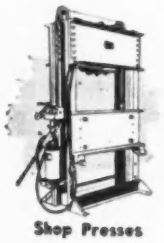
... the handiest tool
in the shop
... to pull a gear
... straighten a shaft
... press a bushing
... force a pin ... or?

you will find 100 uses — for its 100 tons of hydraulic power!

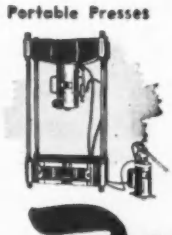
WANT AN ANSWER to those special problems where you need to press, squeeze, pull, force or otherwise use 100 tons of handy power? . . . Get a Rodgers Shop Press and save yourself time, labor and trouble.

The Rodgers is such a versatile unit for so many varied applications in a shop that usually it is considered indispensable. Here is why it's versatile — look at the Rodgers Model 108 above, for example. It is simple and sturdy, yet so flexible that the opening between the top frame and bolster may be set from 4½" up to 32½" by adjusting the alloy steel pins upon which the bolster rests. A hand crank easily raises or lowers the bolster for adjustment. The 100-ton cylinder may be mounted as shown, inside the press frame head, or hung below — and is adjustable across the entire width of the frame. Ram travel of the cylinder may be either 6½" or 13". When desirable, the press can be used resting on its side for more convenient handling of large pieces. Power is supplied by the powerful Rodgers 4-Speed Hand Pump, mounted on press or separate, or by a Rodgers Power Pump Unit. Once you get a Rodgers, you'll say too . . . "it's the handiest tool in the shop".

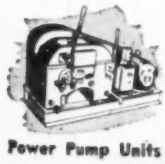
Write us today for *all* of the details . . . and our new catalog.



Shop Presses



Portable Presses



Power Pump Units

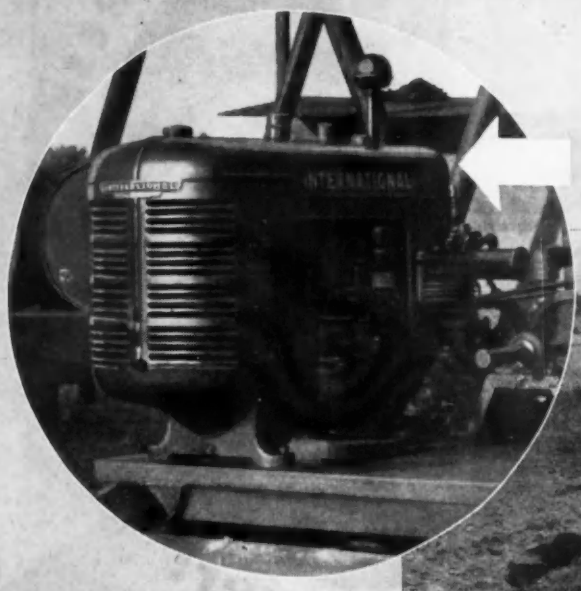
Crawler-Track Presses

Rodgers Hydraulic, Inc.

1701 Walker St., St. Louis Park, Minneapolis 16, Minn.

Hydraulic Power Equipment

Peak Performance...



at the Oil Wells

on Tough Dirt-Moving Jobs...

OIL FIELD operations require peak performance under all conditions. That's why INTERNATIONAL is the big name in power for oil field work. These TracTracTors, industrial wheel tractors and power units are rugged. They are engineered to stand up under the tough jobs.

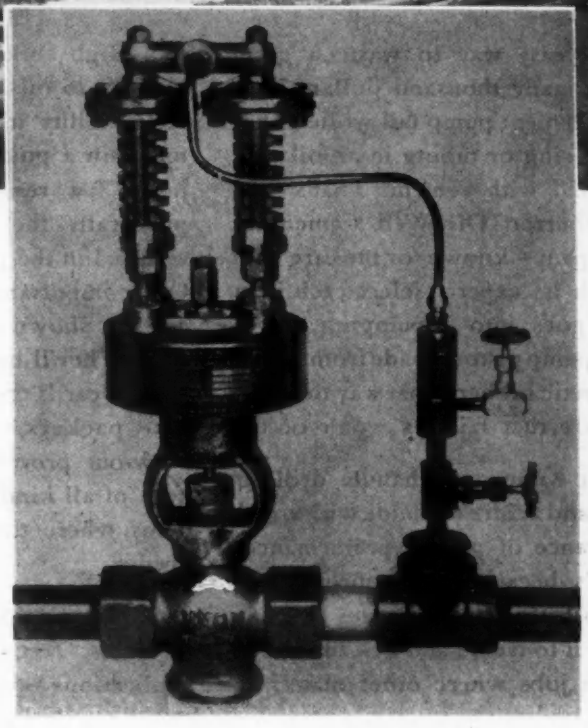
These tractors and engines are versatile as well as dependable. Powerful Internationals take on a variety of jobs. And how they do them! For many of these engines, 24 hours is an ordinary working day. Yet they slash maintenance costs to a minimum.

For freedom from breakdowns, for economical operation that can be depended on day in and day out, standardize on International. See the International Industrial Power distributor or dealer and let him give you all the information on these crawlers, wheel tractors and power units—Diesel and carburetor. He has the answer to the demand for peak performance. It's International!

INTERNATIONAL HARVESTER

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois

INTERNATIONAL Industrial Power



The **NIXON**

SELECTIVE FLOW DIFFERENTIAL

Back Pressure Regulator

On High Pressure Oil and Gas Separators

Unusual Features of this Regulator Are:

- "Snap Action" of main valve eliminating throttling and cutting out of valve and seat from abrasion.
- All pressure reduction takes place at positive choke down stream from regulator.
- Can be adjusted to hold from 150 lbs. to 1000 lbs. back pressure on separator or gas line.

These outstanding Regulators are ready for delivery . . . NOW

WILSON SUPPLY COMPANY

1412 MAURY ST., HOUSTON, TEXAS

SALES OFFICES: Tulsa, Oklahoma; Dallas and San Antonio, Texas. LOS ANGELES: Western Pressure Control, 5700 Santa Fe Ave. TRINIDAD, B. W. I.: Neal Massey Eng. Corp.

BRANCH STORES: TEXAS—Kilgore, Beaumont, Barbers Hill, Bay City, Monahans, Alice, Victoria, Corpus Christi. LOUISIANA—Lake Charles, New Iberia, Harvey, Shreveport. ARKANSAS—Magnolia. MISSISSIPPI—Natchez.

HYCAR PISTON PERFECT FOR TOUGHEST OIL FIELD PUMPING SERVICE

Handles drilling mud, cement, acid up to 10,000 psi

Photos courtesy Halliburton Oil Well Cementing Co. Hycar parts by Texas Rubber & Specialty Corp.

AN easy way to waste a good many thousand dollars is to let a cement pump fail while either the casing or tubing in an oil well is filled with cement. That's why Halliburton Oil Well Cementing Company—known for the care with which its experts select each item that goes into a pumping unit—uses pump pistons made from Hycar synthetic rubber. That way they can be *sure* that failures won't occur.

The same units handle drilling mud and acidizing fluids with equal assurance of perfect performance. That's because Hycar provides a combination of properties that enables it to tackle and lick the really tough jobs where other materials fail. High abrasion resistance; resistance to oils, acids, most chemicals; ability to *stay* resilient and maintain a positive seal; these are just a few reasons why Hycar is practically the standard resilient material in the petroleum industry. Other important properties of Hycar are shown in the box at the right. They'll help you understand why Hycar is the ideal material for gate packers, mud line valves, blow-out preventers, gaskets and hose of all kinds, and many other items where these properties are needed.

Ask your supplier for parts made of Hycar. Test them in your own applications — difficult or routine. Learn for yourself that Hycar can help you reduce operating costs—that it's wise to use Hycar for long-time, dependable service. *Hycar Chemical Company, Akron 8, Ohio.*

WHAT HYCAR DOES IN OIL FIELD APPLICATIONS

1. *Resists oil and gas—even under high pressures and temperatures.*
2. *Resists action of abrasive-laden fluid under high pressure and at high velocity.*
3. *Wears at slow rate even under worst conditions.*
4. *Makes a positive, leak-proof seal, even after a long period of service.*
5. *Provides high elasticity.*
6. *Gives high tensile strength.*
7. *Has minimum tendency to cold flow and compression set.*

Hycar

Reg. U. S. Pat. Off.

LARGEST PRIVATE PRODUCER OF BUTADIENE TYPE

Synthetic Rubbers

EVEN A
Cabot
IS MORE
SATISFACTORY...

Cabot model CT-14L-22.5DC. See Composite Catalog pages 649-651.

WHEN POWERED WITH A
FAIRBANKS-MORSE
"ZC" ENGINE!

ZC-208 Fairbanks-Morse.
See Composite Catalog page 925.

JONES & LAUGHLIN SUPPLY COMPANY

Subsidiary of Jones & Laughlin Steel Corporation

TULSA, OKLAHOMA

J&L
STEEL

SCHLUSS

GREAT GUNS!

● Sufficient firepower to cleanly penetrate up to three strings of casing is a known quality of Schlumberger guns. Recent tests in the Schlumberger "test well" laboratory where pressure and temperature conditions can be created to match those encountered at any depth down to 20,000 feet, prove conclusively that today's high-tensile strength Grade N-80 casing is no obstacle for these powerful guns.

Call Schlumberger for your next gun perforating job and note the difference. Schlumberger Well Surveying Corporation, Houston, Texas. Branch offices in all active oil areas of the U. S. A.

E R G E R

KELITE pH CONTROL boosts CLEANING EFFICIENCY!

The **pH** test above made efficient operation of the hot tank a certainty.

Stubborn oil deposits were removed with ease by a solution of Kelite Keprocess maintained at the correct pH.

Your degreasing, descaling, and paint stripping problems can all be solved by a Kelite Service Engineer in the same direct manner. You state your problem. He makes the necessary scientific tests and gives you recommendations for a cleaning procedure which will do the job efficiently. The guesswork of old "try this" and "try that" methods is replaced by scientific accuracy.

Through constant adherence to the pH chart, which accurately measures the cleaning power needed for every type of soil removal and shows the exact limits of safety for the surface being cleaned, Kelite has taken the guesswork out of cleaning . . . provided a reliable key to a new, high standard of efficiency.

Send for Kelite's informative new booklet: "Easier Cleaning for the Petroleum Industry." Kelite Products, Inc., 909 E. 60th St., Los Angeles 1, Calif.

"Kelite" Reg. U. S. Pat. Off., Chart copyrighted 1942 by Kelite Products, Inc. Executive Offices: 909 East 60th Street, Los Angeles 1. Manufacturing plants in Los Angeles, Dallas, Chicago, and Perth Amboy. Branches in principal cities.

KELITE

SCIENTIFIC CLEANING THROUGH pH CONTROL

KELITE pH Control

Magnet Cove Barite

IN THE HEART OF THE WORLD'S MAJOR OIL PROVINCE

• From the world's greatest barite deposit at Magnet Cove in the foothills of the Ozarks comes MAGCOBAR . . . the high-purity mud weight so essential for drilling today's deep, high pressure wells.

The geographical location of Magnet Cove with respect to the oil producing areas makes MAGCOBAR quickly and readily available at a minimum of transportation cost. Nature provided the ideal location . . . MAGCOBAR originated the policy of fair and reasonable prices for mud materials . . . . . the combination has resulted in a reduction of the long-established price of mud weight by one-half, which is now saving the oil industry more than 4 million dollars annually.

Magcobar

Complete

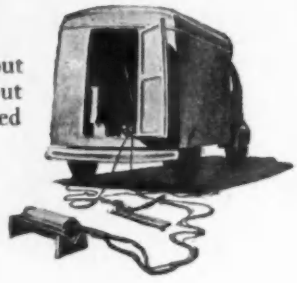
DRILLING MUD SERVICE

MAGNET COVE BARIUM CORPORATION

Malvern, Arkansas — Houston, Texas

PENETRON I —

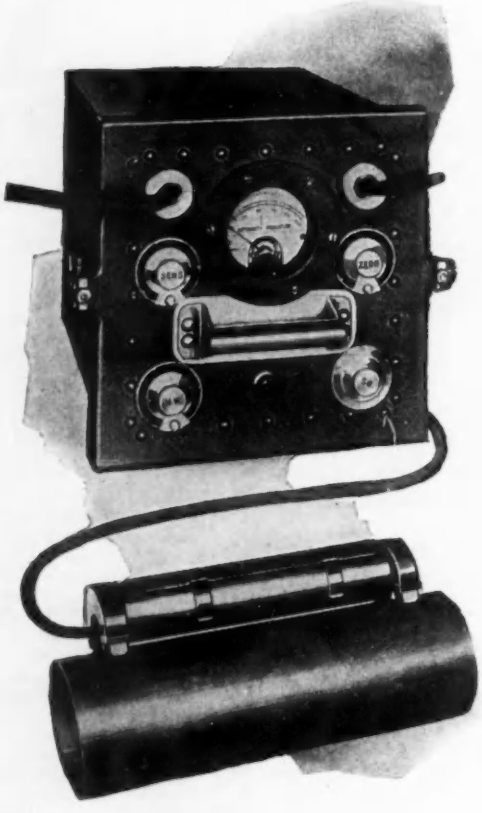
Measured thickness without drilling and calipering but weighed 400 lbs — required a trailer to carry it.



PENETRON II —

Achieved portability without loss of accuracy. Weight, only 40 lbs.

Research in Action!



How continuing Texaco Research developed a radically new idea and then made it better and better

THE PROBLEM: The drilling and calipering of oil industry equipment to check corrosion is costly, time consuming and often unsatisfactory. Texaco Research sought a better method that would quickly and accurately measure the thickness of a pipe or vessel *working from one side only*.

FIRST SOLUTION: After careful consideration exhaustive experiments with radium were undertaken. This resulted in the original Penetron, an efficient instrument but so heavy it had to be carried in a trailer.

SECOND SOLUTION: Further research reduced the weight from 400 to 40 lbs. The instrument was now portable and equally efficient but still heavy.

PRESENT SOLUTION: An instrument of even greater accuracy weighing only 25 lbs.

Thanks to Texaco Research today's Penetron is easily portable, easier to use. In addition to measuring wall thickness it is used to determine both the density and levels of contained liquids from outside the equipment.

PENETRON III —

Thanks to continuing research today's Penetron is *easily* portable yet even more sensitive. It weighs only 25 lbs.

TEXACO

TEXACO DEVELOPMENT CORPORATION

A Subsidiary of The Texas Company

"Never a dull Moment!"

Drill-site clearing for new Gulf Refining Co. wells near Kratz Springs, La. Tough job – but not too tough for "Caterpillar" Diesels!

From clearing the site until the last piece of rig is dismantled, "Caterpillar" Diesel Tractors find useful things to do in oil-drilling . . . *many* more, in fact, than are practical with other types of tractors. By keeping busier (having fewer idle hours), they repay their cost and get into the "clear" more quickly.

With their sure-grip tracks, their tremendous shock resistance, and the dogged "lug" of their powerful engines, bulldozer-equipped "Caterpillar" Diesels can clear away, *single-handed*, thick stands of good-sized trees—whether for drill-rig site or for road to reach it.

Then, bringing in equipment—rigging up – digging slush pits and ditches—leveling—building roads—hauling pipe and supplies – refilling pits—helping to dismantle, load up and head caravan toward tomorrow's job . . . all are "duck soup" for these versatile, dependable, *INDISPENSABLE* workers of the oil fields: "Caterpillar" Diesel Tractors.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

DIGGING SLUSH PITS

ROUGHING OUT ROADS

HAULING SUPPLIES

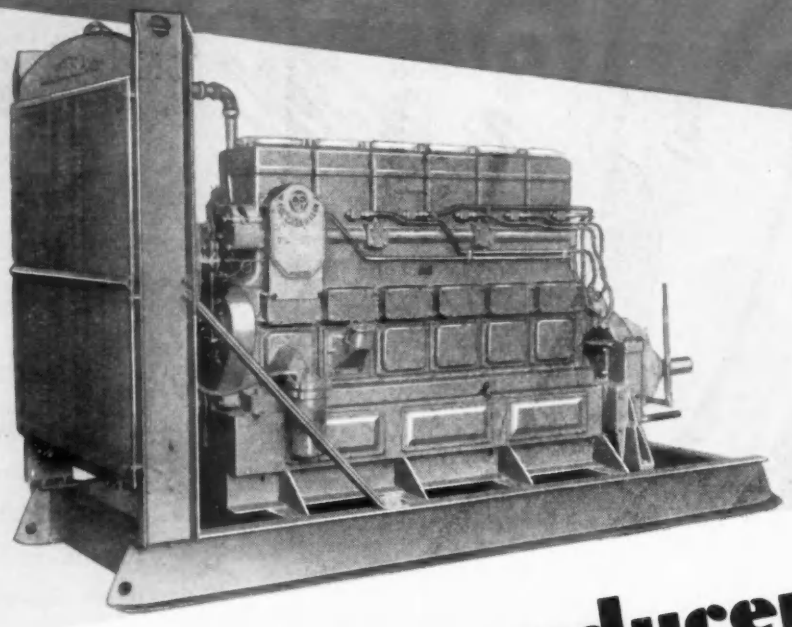
DISMANTLING

CATERPILLAR DIESEL

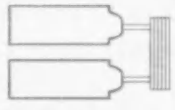
REG. U.S. PAT. OFF.

ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

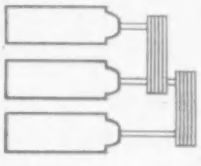
The discharged veteran wears this emblem. Remember his service and honor him.



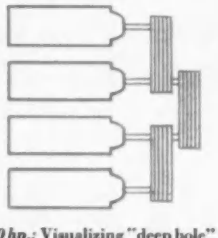
The PROVED producer of low-cost footage



450 hp.: The first rigs powered with compounded Cummins Diesels used *two* Model LP-600's, each rated at 225 hp. at at 800 rpm., producing a total of 450 hp.



675 hp.: Prompted by the success of the two-engine hook-up and also by the trend toward deeper drilling, rig builders fashioned their designs around *three* compounded Model L's which provide a total horsepower output of 675 hp.



900 hp.: Visualizing "deep hole" drilling on an increased scale, manufacturers now have in production rigs which call for *four* compounded L's on the drawworks and two L's compounded on the mud pump.

In choosing the power for your new rig, make sure that you get a *proved* producer of low-cost footage. That Cummins Diesel power is such a producer—a producer of *faster, cheaper* footage—has been demonstrated by its 12-year performance record in every major field and in every heavy-duty oil field service. As a result of that record, Cummins Dependable Diesels are now standard with successful drilling contractors everywhere . . . are offered as original power by leading rig manufacturers . . . power more rigs in the great Mid-Continent Area than any other diesel.

CUMMINS ENGINE COMPANY, INC., Columbus, Ind.

CUMMINS *Dependable* DIESELS

SINCE 1918...PIONEER OF PROFITABLE POWER THROUGH HIGH SPEED DIESELS

THERE'S AN "Oilwell" SLUSH PUMP FOR EVERY TYPE OF ROTARY RIG

RIG owners, large and small, like the efficient, trouble-free performance and low operating costs which are common to all models in "Oilwell's" complete line of power slush pumps. Not only is there a wide range of pump sizes and capacities covering all types of applications, but each model in the line also has a versatile performance range which makes it suitable for a variety of service conditions.

Check these practical advantages. They are the direct result of "Oilwell's" advanced principles in pump design—tested and proven by "Oilwell" engineers under all types of service conditions:

1. Sturdy, quiet power ends fully protected from mud are designed with liberal safety margins to stand up year after year under punishing operations.
2. Heavy-duty roller bearings throughout, with positive and ample lubrication, hold friction-loss to a minimum.
3. Direct-flow, one-piece fluid chambers with large streamlined passages minimize flow-resistance and assure highest volumetric efficiency.
4. Exclusive features, such as DI-HARD liners, tell-tale liner packing, deep stuffing-box compartments and convenient accessibility for field-servicing, reduce "down time" to a minimum.

On mast-type, truck-mounted jobs . . . or on the heaviest power rigs for deep drilling . . . you can depend on "Oilwell" Slush Pumps to deliver the mud with maximum efficiency at minimum cost.

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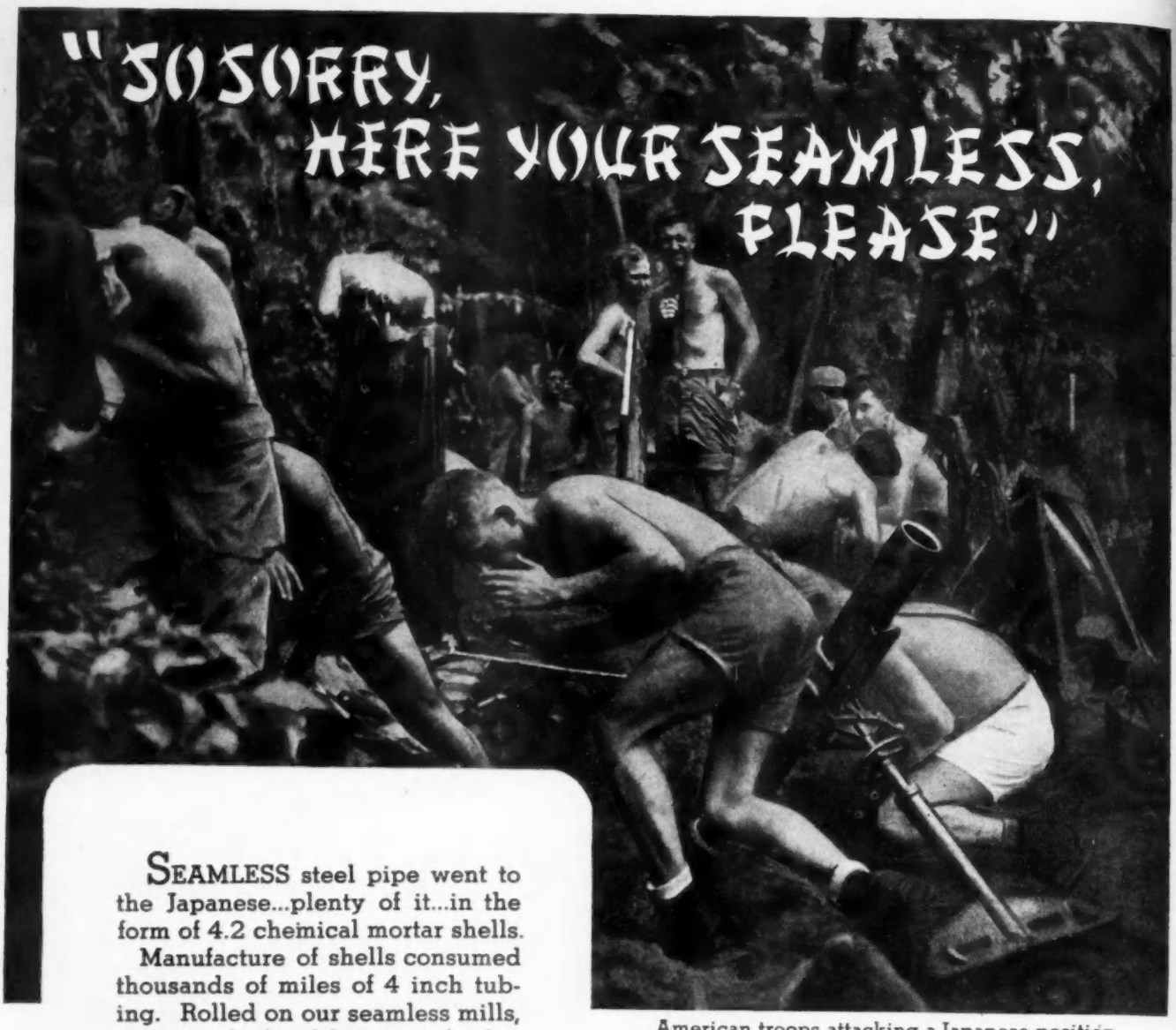
BRIEF SPECIFICATIONS

Pump Model	Maximum Liner Size and Stroke	Hydrostatic Test Pressure —Discharge	Maximum Fluid-Chamber Working Pressure	Max. Working Pressure with Full-size Liners	Maximum Recommended Speed	Theoretical Displacement at Maximum R.P.M.	Maximum Brake Horsepower Input At Maximum R.P.M.	Weight with Short Steel Skids Domestic
	(Inches)	(P.S.I.)	(P.S.I.)	(P.S.I.)	(R.P.M.)	(G.P.M.)	(H.P.)	(Pounds)
8-P	5 x 8	3,000	1,800	540	80	205	76	5,175
12-P	5 x 12	2,000	1,200	540	70	270	100	7,500
12P-LD	6 x 12	2,000	1,200	365	70	395	100	7,895
612-P	6 x 12	3,000	1,800	520	70	390	140	10,290
712-P	7 x 12	3,000	2,000	600	70	540	220	16,900
14P-HD	7¼ x 14	4,000	2,500	765	65	620	325	23,600
18-P	7¼ x 18	6,000	3,000	765	55	675	353	28,700
20-P	7¾ x 20	6,000	3,000	825	55	850	480	43,550

"OILWELL"

1945



American troops attacking a Japanese position with a 4.2 mortar, somewhere in the Pacific area. Official U.S. Army Signal Corps photograph.

SEAMLESS steel pipe went to the Japanese...plenty of it...in the form of 4.2 chemical mortar shells.

Manufacture of shells consumed thousands of miles of 4 inch tubing. Rolled on our seamless mills, it was rushed to fabricators for finishing into mortar shells. Of course, that was top priority business and represents pipe our regular customers have had to do without; war orders of this type have taken up a substantial part of our facilities.

Very shortly, however, there will again be all the seamless you need, in standard sizes and grades. So it's not too early now to think about orders. A letter, wire or phone call will bring a Youngstown representative, at your convenience, to discuss your needs, present as well as future. We are ready to go the limit in serving your requirements for steel pipe of all kinds.

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

YOUNGSTOWN 1, OHIO

Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

Ask your distributor for:

Pipe and Tubular Products - Sheets - Plates - Conduit - Bars - Coke Tin Plate - Electrolytic Tin Plate - Rods - Wire - Nails - Tie Plates and Spikes.

UNIT PUMPERS

Dictates Pumping Profits

YOU can select your unit pumpers by the haphazard hit or miss method that results in the misfits that are too small or too large —too light or too heavy, or . . .

You can have the counsel of a competent National Supply representative in the selection of the proper pumper to fit your individual requirements from this comprehensive line of National Unit Pumpers:

TU-24G-JD2TP
TU-44G-HD4TP
TU-64G-HD6TP
TU-104G-HD10TP

TU-164G-HD16TP
TU-164-HD16TB
TUS-164-HD16TB

TU-234G-HD23TP
TU-234-HD23TB
TUS-234-HD23TB

TU-304-HD30TB
TU-304-H46TB
TU-304-HD46TB
TUS-304-HD30TB
TUS-304-H46TB
TUS-304-HD46TB

TU-464-H46TB
TU-464-HD46TB
TUS-464-H46TB
TUS-464-HD46TB

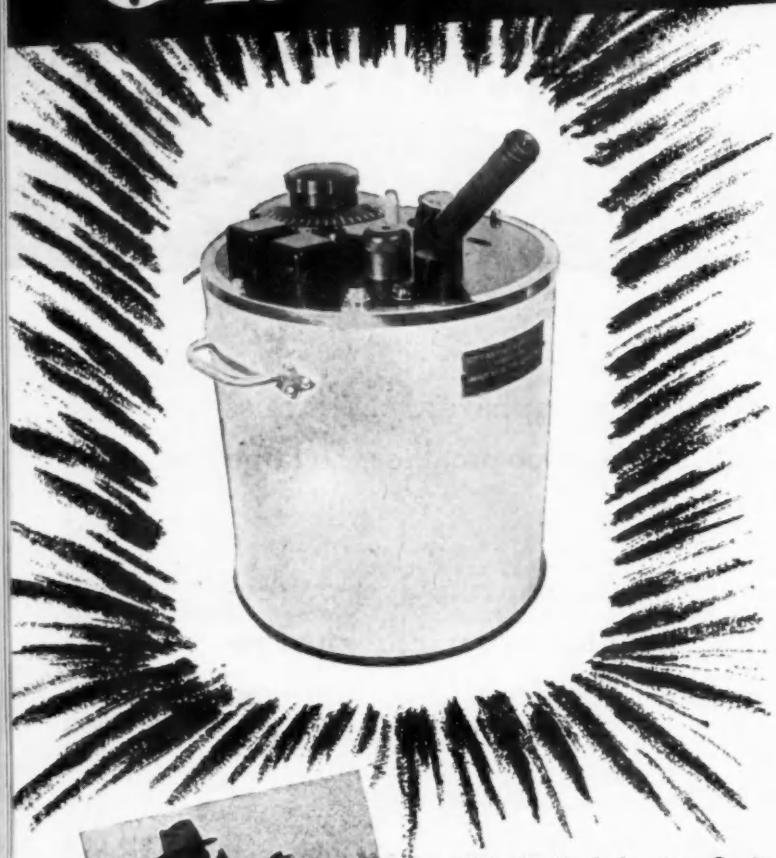
TU-654L-H65T
TU-654L-HD65T
TUS-654L-H65T
TUS-654L-HD65T

TU-904L-H90T
TU-904L-HD90T
TUS-904L-H90T
TUS-904L-HD90T

TU-1604-HD160T

General Sales Offices: Toledo, Ohio: Division Offices: Denver; Ft. Worth; Pittsburgh; Tulsa; Torrance.
Export: The National Supply Corporation, 30 Rockefeller Plaza, New York, N. Y., U. S. A.;
River Plate House, 12 South Place, London, E. C. 2.

VERSATILE GRAVITY METER



The advantages of this compact, lightweight North American Gravity Meter are readily apparent when it is realized that one man can comfortably and easily carry it on his back with the special pack carrier. It can be carried into swamplands, through dense undergrowth, over rugged mountain country and any other terrain with ease and simplicity. It can be mounted in an automobile for making convenient and rapid surveys in normal accessible areas. With the tripod extended through the floor of the car, it is not necessary to remove the meter to make a reading. It can be transported in a canoe or small boat.

The meter weighs only 28 pounds. With back pack and battery the weight is but 45 pounds. The meter is temperature compensated. The current required is sufficiently low, so that a single motorcycle battery will keep the meter unaffected by outside temperature throughout the day.

Manufactured in our own laboratories, the North American Gravity Meter is leased for domestic operation and sold for export.

NORTH AMERICAN GEOPHYSICAL CO.

Gravity-Seismic Surveys . . . Geophysical Apparatus
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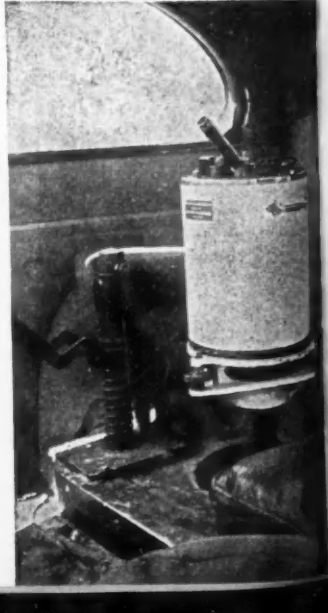
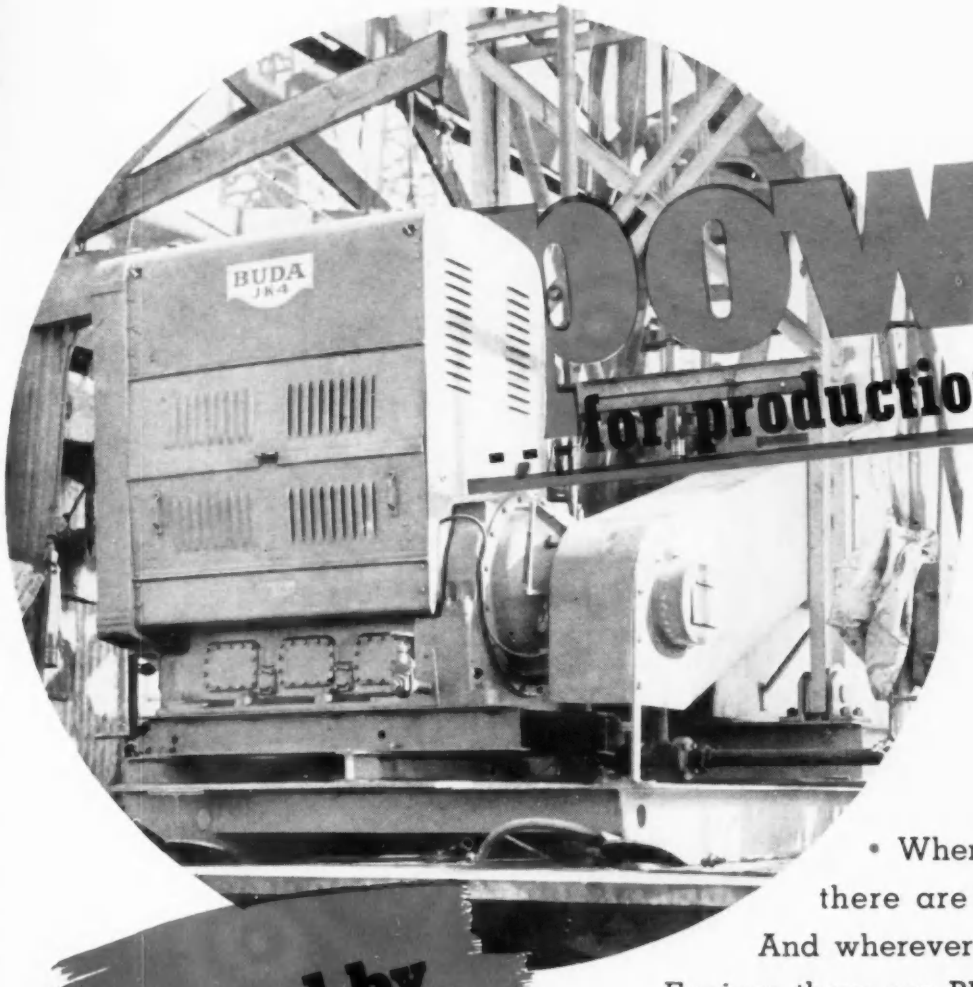
With the North American Gravity Meter in the back pack the crewman sets off for a location in swamp lands.

In areas accessible by automobile, the North American Gravity Meter is conveniently mounted in a standard passenger car. With the tripod extended through the floor of the car, it is not necessary to remove the meter to make the reading.

Two men in a small boat with outboard motor carry the North American Gravity Meter across a lake to make readings on islands or at off-shore locations.





power for production pumping

BUDA Model JK-4 at Signal Hill, Calif. Fuel cost (natural gas) 50c per day. Replaced electric drive costing $35 to $45 per month.

backed by BUDA field assistance

• Wherever there is oil, there are BUDA Engines. And wherever there are BUDA Engines there are BUDA Oilfield Distributors to give them engineering check-ups, to instruct operators, to supply parts and service promptly. You are not stranded "on your own" when you operate BUDA Engines. For better service and *More Horsepower Hours Per Dollar*, buy BUDA. Write for literature.

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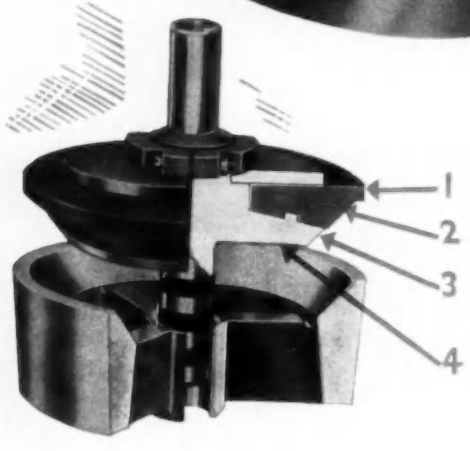
BUDA Oil Field ENGINES

NATURAL GAS
GASOLINE • DIESEL
20 TO 340 HORSEPOWER

DESIGNED FOR HIGH PRESSURE POWER PUMPS

ONLY "AMERICAN" Slush Pump SEATS have this 3-WEB DESIGN for longer life!



Note successive four-point contact of valve on seat: (1) Lip of insert contacts top of seat. (2) Taper of insert then contacts taper of seat. (3) Next, taper of valve body contacts taper of seat. (4) Bottom of valve body then contacts top of three-web bracing! This 1-2-3-4-contact results in complete, even *distribution of load* of valve on seat . . . forms metal to metal, and rubber to metal seal!

GIVES COMPLETE SUPPORT AND ADEQUATE DISTRIBUTION OF LOAD

Modern power pumps operate at *extremely high pressure* . . . put tremendous strain of *extra-heavy loads* on valve seats! That's why it's important to know that "American" Seats—with exclusive 3-web design—are giving outstanding service in all areas! Performance-records prove they *have what it takes* to stand up under this terrific pounding! Scientifically designed . . . "American" Seats *completely distribute* the load of every valve-impact *over a maximum area of the seat!* *(see drawing at left.)*

AMERICAN IRON & MACHINE WORKS CO. · OKLAHOMA CITY U.S.A. ·

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